1920.

Vol. XVIII. Part 6.

[Registered at the General Post Office, Melbourne, for transmission by Post as a Newspaper.]

The Journal of the Department of Agriculture of Victoria, Australia.

June, 1920.

PRINCIPAL CONTENTS

Report on Victorian Egg-Laying Competition

Loganberry Culture

Agricultural Display at the Special Show

Farm Notes

PRICE THREEPENCE. (Annual Subscription—Victoria, Inter-State, and N.Z., 3/-; British and Foreign, 5/-.)

Turn Over Bigger Profits!

Sow

BRUNNING'S

Broadleaf Hunter River

LUCERNE

Best Machine dressed, pedigreed, and tested seed, ensures a high germination and a successful crop.

LUCERNE is absolutely the most profitable crop a farmer can sow. It is valuable as fodder for horses, dairy cattle, sheep, and pigs. Can be cut and fed, pastured, or made into hay.

Excels every other crop in—

(a) Yield per acre.
(b) Feeding Value.
(c) As a Drought Resister.
(d) As a Soil Improver.

Write for Quotation and Sample To-Day!

BRUNNINGS

(F. H. BRUNNING PTY LTD)

EVERYTHING FOR THE FARM, GARDEN, & ORCHARD.

64 ELIZABETH ST. MELB.

VICTORIA MUSEUM MELBOURNE

THE JOURNAL

OF

THE DEPARTMENT OF AGRICULTURE,

VICTORIA, AUSTRALIA.

CONTENTS.—JUNE, 1920.

		PAGE
Report on the Ninth Victorian Egg-Laying Competition—1st April, 1919, to 31st March, 1920	*A. V. D. Rintoul*	321
Small Fruit Culture in Victoria	*A. A Hammond*	351
Agricultural Display at the Special Show		359
Farm Notes—State Research Farm, Werribee—for May ...	*H. C. Wilson*	368
Standard Test Cows—Report for March Quarter, 1920		373
Orchard and Garden Notes	*E. E. Pescott*	382

COPYRIGHT PROVISIONS AND SUBSCRIPTION RATES.

The Articles in the Journal of the Department of Agriculture of Victoria are protected by the provisions of the Copyright Act. Proprietors of newspapers wishing to republish any matter are at liberty to do so, *provided the Journal and author are both acknowledged.*

The Journal is issued monthly. The subscription, which is payable in advance and includes postage, is 3s. per annum for the Commonwealth and New Zealand, and 5s. for the United Kingdom and Foreign Countries. Single copy, Threepence.

Subscriptions should be forwarded to the Director of Agriculture, Melbourne. A complete list of the various publications issued by the Department of Agriculture will be supplied by the latter.

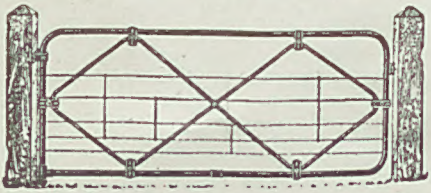
W. & W. 702

Cyclone

METAL FENCES & GATES

SUPREME FOR QUALITY OF MATERIAL AND WORKMANSHIP

THIS IS THE STRONGEST GATE MADE



INSIST ON CYCLONE EVERY TIME

Fig. 215. Cyclone Diamond Gate. 4 ft. high (Regd.).

CYCLONE METAL GATES ALWAYS HANG TRUE

GET OUR ILLUSTRATED CATALOGUE

Cyclone Pty. Ltd. 459 Swanston Street, MELBOURNE
Also at Sydney and Adelaide

JERSEY BUTTER BULLS

Apply—

C. GORDON LYON, "Banyule," Heidelberg, Victoria

DEPARTMENT OF AGRICULTURE, VICTORIA

YEAR BOOK OF AGRICULTURE FOR 1905

448 Pages 200 Illustrations 2 Coloured Plates

Cloth, 3s. 6d.; paper, 2s. 6d. *Postage:* C., cloth 2½d., paper 2d.; N.Z., cloth 9d., paper 8d.; B. and F., cloth 1s. 6d., paper, 1s. 4d.

Why not use a BRITISH Separator?

IF you are familiar with the high standard of workmanship and quality in British machinery, you have very good reasons for investigating the merits of the

"PRINCESS"

This machine is of simple design, and solid British construction from Base to Bowl. We believe it will give you more efficient—and longer—service than any other Separator on the market. It takes off a rich, even cream of 40% butter fat test—giving a skim milk test of ·02%. Fitted with non-corroding Aluminium Discs.

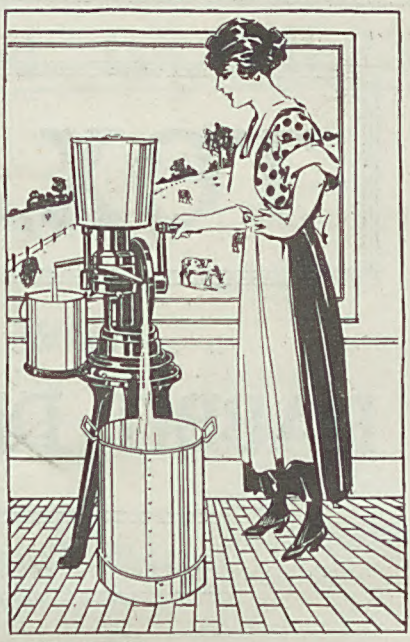
Read what a user says:

"The Homestead," King Valley.
Messrs. J. Danks & Son Pty. Ltd.
Gentlemen,

After considerable hesitation, I replaced our ——— made Separator with a "Princess," and am very pleased with the result.

It is light running, clean skimming, easy to clean, and typical of British-made machinery—solidly made and well finished.

H. RAYWARD.



Send for Catalog

JOHN DANKS & SON PTY. LTD.

391-403 Bourke St. Melbourne

PARSONS BROS. & CO.

Propy. Ltd.

OATMEAL, SPLIT PEAS, and
PEARL BARLEY MILLERS
and "CORNINA" MANUFACTURERS

ARE

BUYERS of OATS, PEAS, BARLEY, and MAIZE.

SEND SAMPLES OF YOUR GRAIN TO US.

BOX 53,
G.P.O., MELBOURNE.

TOXA

NO Danger of FIRE!

:: :: THE WELL-KNOWN :: ::

RABBIT DESTROYER

In 2-lb. Tins, 4s. per Tin

FELTON, GRIMWADE & CO., MELBOURNE

NEW ZEALAND

Loan & Mercantile Agency

COMPANY LIMITED

Head Office— LONDON

Melbourne Office— COLLINS ST. W.

Liberal Cash Advances

Wool, Grain, Skins, Hides, Tallow, Bark, Stock and Station Brokers

ON COMMISSION ONLY

Butter Shipments Undertaken on Owner's Account

Agents for

COOPER'S SHEEP DIP

For Victoria and Riverina

PAGE'S PATENT WIRE STRAINER and IRONSIDE'S WIRE CUTTER

Chief Agents in Victoria for the PALATINE INSURANCE CO.

WAIT & SEE

WHAT

SPLENDID RESULTS

YOU WILL GET

IF

YOU DIP IN

COOPER

FARMERS and GRAZIERS

The application of a heavier dressing of Superphosphate will produce

MORE WHEAT.

The top-dressing of your pasture means

MORE WOOL,

MORE MILK, and HEALTHIER STOCK.

ADDRESS YOUR INQUIRIES TO—

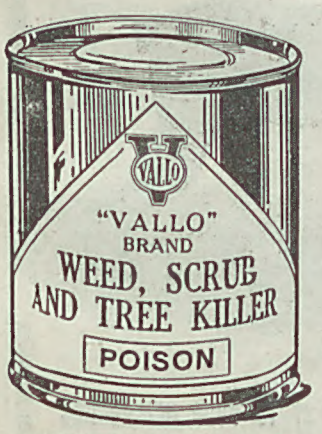
WISCHER & CO. PTY. LTD.

Manufacturers of Superphosphate, and Special Fertilizers for all Crops.

OFFICES: 153 William St., MELBOURNE.

WORKS: Whitehall St., YARRAVILLE.

TREES and SCRUB
ST. JOHN'S WORT
THISTLES BRIARS
BLACKBERRIES
BOXTHORN
COUCH FERNS
FURZE SORREL



NOXIOUS WEEDS

Every square foot of ground is valuable now-a-days—far too valuable to be usurped by undesirable weeds and scrub. Why should they sap the vitality out of ground which should contribute to your storehouse or granary?

"VALLO" Brand Weed Scrub and Tree Killer

is the speedy, sure, and economical means of cutting short their existence. "VALLO" is not an experiment. It is an absolute exterminator of any and every kind of noxious growth. Whether your trouble be giant trees or common sorrel, put "VALLO" on the job and you'll be impressed by what it can do.

PRICES—56 lbs., 70/-; 15 lbs., 21/3; 7 lbs., 10/6; 1 lb., 2/-; ½ lb., 1/3

Manufactured by

A. VICTOR LEGGO & CO.

Melbourne — Sydney — Brisbane

Bonedust, Superphosphate,

And Other High-Grade Fertilizers. Poultry Bone Grit, Meat Meal, Cattle Lick

DELIVERED AT RAILWAY STATION, FOOTSCRAY, OR ON WHARF, MELBOURNE

J. COCKBILL, BONEDUST :: :: :: MANUFACTURER

OFFICE: 407 POST OFFICE PLACE, MELBOURNE

BONES BOUGHT. CONSIGN TO ME, FOOTSCRAY. Telephone 2098.

BLYTH'S TRADE MARK WILL NOT BURN FOLIAGE REGISTERED ARSENATE OF LEAD

Ten Years Practical Tests

The Renowned

"BLUE BELL"

Arsenate of Lead

Secure your orders at once.

F. W. PRELL & CO., 31 Queen St., Melbourne

SOLE VICTORIAN AGENTS

'Phone 7419 Central

The Australasian Mutual Insurance Society Ltd.

400-2 Collins St., MELBOURNE.

Live Stock Insured

at Lowest Current Rates obtainable in Australia.

OTHER DEPARTMENTS OF BUSINESS.
Fire, Marine, Fidelity Guarantee, Plate Glass, Personal Accident and Sickness, Employers' Liability, Workmen's Compensation, Public Risk, Motor Car, and Burglary.

INSURE WITH THIS SOCIETY, AND RECOMMEND IT TO YOUR NEIGHBOURS

RESULTS TELL!

FARMERS, THIS WILL INTEREST YOU

The following is the average yield obtained in the wheat plots at Longerenong Agricultural College for five years ending 1919 :—

MANURE.	Average Yield for 5 Years.	Increase due to Manure.	Profit Taking Wheat at 4/- per Bushel.
	Bushels.	Bushels.	
1. No Manure	23·8	Nil.	—
2. Superphosphate, 56 lbs. ...	30·4	6·6	£1 6 5
3. Superphosphate, 1 cwt. ...	31·5	7·7	£1 10 10
4. Superphosphate, 2 cwt.	**33·1**	**9·3**	**£1 17 2**

INCREASE THE DRESSING OF SUPERPHOSPHATE PER ACRE, and obtain the maximum profits from the acreage cultivated. Don't forget the following improvement in the stubbles. Try an increased dressing this year for yourself.

Works—
Yarraville (Vic.)
Nth. Fremantle West Australia

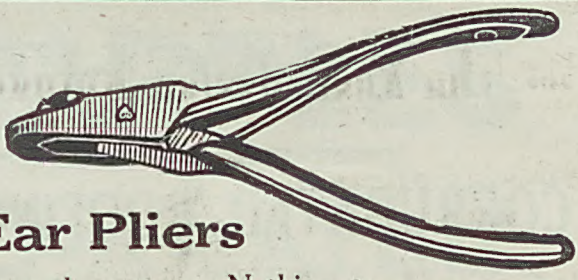
M.L.

SUPERPHOSPHATE FOR WHEAT

MOUNT LYELL CHEMICAL WORKS

Office—
"Collins House," 381 Lt. Collins Street, Melbourne

Lamb and Sheep Ear Pliers



Quicker and better than tags. Nothing to tear out or irritate the ear. Just a clean, quick-healing cut.

Lamb Ear Pliers

Nos.	1	2	5	11	25	29
	6/6	6/6	6/6	6/6	11/6	11/6

Sheep Ear Pliers

All sizes stocked.

Special patterns made to order.

McPherson's Proprietary Limited

TOOLS FOR FARM, HOME, AND WORKSHOP

582-88 COLLINS STREET, MELBOURNE

Formed OF Farmers
BY Farmers
FOR Farmers

The Phosphate Co-operative Company of Australia

Limited
(Registered)

Will Manufacture all kinds of Fertilizer Required by Farmers

Are You a Shareholder? If not, why not?

3,500 Farmers have already Subscribed for over £100,000 worth of Shares

SUBSCRIBE NOW!

LARGE CAPITAL MEANS LARGE WORKS

Particulars from—
REGISTERED OFFICE,
545 LITTLE COLLINS STREET,
MELBOURNE

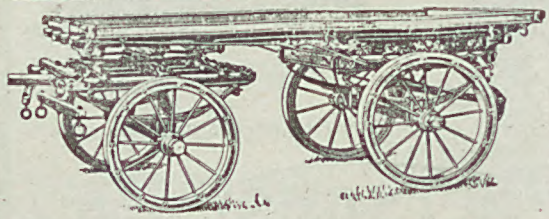
JAS. B. ROBERTSON,
Acting Secretary.

LYSAGHT'S

ORB

CORRUGATED ROOFING IRON

is again in full supply throughout Australia and is obtainable from all leading Ironmongers and Timber Merchants



"Australia's WAGON"

Hildyard Steel Wheel Wagons at the Front. They are now fitted with twin roller bearings, 33 per cent. saved in draft. More durable than ever. Less wear and tear. No boxes to crack. We guarantee them. The rollers run in oil in dustproof races. They are now perfection, and we can supply to carry all weights as usual for wool, wheat, or farm. Ordinary axles supplied if preferred.

J. J. Gordan (Ardlethan) says:—"The 5 ton, 36 in. and 40 in. dia. wheel wagon you supplied me runs splendid. I am putting 60 bags of wheat on 2 horses. That proves its light draught."

Send for Catalog Now **HILDYARD WAGON WORKS,** KENSINGTON, MELBOURNE, VIC.

He turns pretty slow— but he gets all the cream!

—owing to the wonderful Suction-feed, which insures just as clean a skim when you turn the Sharples separator slow, as when you turn it fast! The boy might turn the crank only 35 to 40 turns per minute, but he would get just as clean a skim as if his dad were speeding the crank around at 50 turns per minute.

The hired man, especially at the end of a hard day's work, will but seldom turn a separator up to regulation speed. And you, yourself, are often "dead-tired" and slacken down unconsciously. All fixed-feed separators when turned below speed lose cream—from 7 to 13 lbs. per cow per year. This loss totals 80 million lbs. of butter yearly in the United States alone—Sharples can save it all!

SHARPLES

Famous Suction-feed
"Skims clean at any Speed"

SEPARATOR

—the *only* separator that skims clean at widely-varying speeds
—the *only* separator that delivers cream of unchanging thickness—all speeds
—the *only* separator that skims faster when you turn faster
—the *only* separator with just *one* piece in the bowl—no discs, easiest to clean
—the *only* separator with knee-low supply tank and a once-a-month oiling system

Discard your old fixed-feed separator. Get a new Sharples Suction-feed —the *only* separator that feeds the milk into the bowl *in direct proportion to the separating force*, thus getting 5% more cream under average conditions! Write to-day for catalog.

Agents

Newell & Co., Melbourne
John Bridge & Co., Sydney
Elder Smith and Co., Adelaide
Clark & Fauset, Brisbane
Chas. Atkins & Co., Perth
J. R. Green, Launceston

DELCO-LIGHT

MEANS

COMFORT, CONVENIENCE, EFFICIENCY

DELCO-LIGHT brings the benefits of town to your country home, without the town's unpleasantness.

Delco-Light means that you have floods of instant electric light, where and when you want it, by the mere pressing of a button.

Delco-Light means that you can have as much electric power, for driving your plant, as you need.
Just stop and think how easy that makes things.

Delco-Light is a complete electric lighting and power plant for farms and country homes, for all country business purposes.

Delco-Light is so simple and easy to install and work that a child can start it. It needs no attention—once started it runs itself—you have only to give it kerosene, and there is only one place to oil it.

LIGHT & POWER WHERE AND WHEN YOU WANT IT

Write for full particulars to—

WARBURTON FRANKI (Melbourne) Limited

380 Bourke St., Melbourne

DEPARTMENT OF AGRICULTURE

GOVERNMENT COOL STORES

VICTORIA DOCK

Facilities are provided for producers and smaller exporters of the various kinds of produce, so that direct shipments on their own account may be undertaken. The Government ownership and conduct of Cool Stores places producers in an independent position, and, in addition, preserves an open channel for the carrying on of the export trade in perishable products.

The Department of Agriculture will receive, handle, freeze, store, and ship **Butter, Cheese, Eggs, Fruit, Meat, Poultry, Rabbits and Hares, &c.,** for producers and exporters.

Produce to the value of over **£30,000,000** has been treated at the **Government Cool Stores.**

GOVERNMENT COOL STORES, VICTORIA DOCK (Dudley St.)

Telephones:

Office: 10383 Central. **Superintendent and Engineer-in-Charge: 10382 Central.**

SCALE OF CHARGES, ETC.

and further particulars may be obtained upon application to the

EXPORTS SUPERINTENDENT, DEPARTMENT OF AGRICULTURE,
PRODUCE OFFICES, 605-7 FLINDERS STREET, MELBOURNE.

Telephone 9380 Central.

DOOKIE AGRICULTURAL COLLEGE

Provides Special Facilities for Practical and Scientific Agricultural Education

Notable Agriculturists say that this College offers the best agricultural education and practical training in the world

THE COLLEGE YEAR COMMENCES IN MARCH **STUDENTS MAY BE ENROLLED AT ANY TIME**

Alternative Courses—
(a) Diploma Course .. Three Years.
(b) One Year's Course.

Total Fees—
£25/-/- per annum.

The college contains modern and well equipped laboratory and lecture hall, single bedrooms, recreation and sports grounds.

Of the 5,913 acres of farm land at Dookie, 1,000 acres were put under crop by students last season; and champion prizes were won for sheep and pigs at the last Royal Agricultural Society's Show.

FARM SUBJECTS.—Agriculture, Animal Husbandry, Poultry, Fruit Growing, Butter and Cheese Factory Management, Building Construction for Farmers.

EACH BRANCH UNDER SPECIALLY TRAINED EXPERTS

LONGERENONG AGRICULTURAL COLLEGE

SESSIONS COMMENCE MARCH AND SEPTEMBER

This College is specially adapted for Junior Students from 14 years of age

AREA OF FARM, 2,336 ACRES

MAIN BRANCHES OF FARM WORK.—Grain Growing, Fat Lamb Raising, Dairying, Irrigation of Fodder Crops, Fruit, &c.

Total Fees—£25 per annum.

Full particulars obtainable from **T. J. PURVIS, Esq., Secretary, Council of Agricultural Education, Department of Agriculture, Melbourne,** or the **Principals of the Colleges.**

THE UNIVERSITY OF MELBOURNE

VETERINARY SCHOOL

Complete Courses of Instruction are conducted in all Subjects for the Degree of Bachelor of Veterinary Science (B.V. Sc.), and for the License (L.V. Sc.).

Veterinary Surgeons possessing the above qualifications are eligible for registration under the Veterinary Surgeons Act (Victoria) and for Veterinary Appointments in the Commonwealth and State Services and in the Army Veterinary Corps.

For full particulars apply—

The DIRECTOR, Veterinary School, PARKVILLE, VICTORIA

Copy of Testimonial.

Edsall Street, Malvern.

The Queensland Molasses Co., Melbourne.

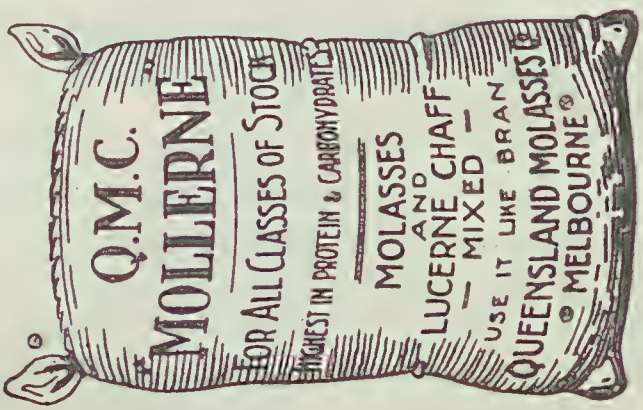
Dear Sir,

I want to say our firm has been using "Mollerne" for the past twelve (12) months.

We find it very economical and good, mixed with other feed, for the horses; they do not leave a particle in their boxes, and also saves the use of half bran and oats; also the horses look and do well on it.

Yours faithfully,

(*Sgd.*) LARCHER Pty. Ltd.



Consign Your Stock

TO

SCARLETT & CO.

NEWMARKET

OUR weekly sales at Newmarket are conducted by Mr. W. E. Phillips, Auctioneer, who personally supervises all classing, drafting, and selling of stock.

Our Land Department is under the management of a Sworn Valuator and, having properties in all good districts of Victoria and Riverina, we will not waste your time with impossible propositions.

Our Jute Department co-operates with the producer. We sell Bags, Twine, Oils, &c., direct to the farmer.

Our Grain Department will buy your products, or sell on your account at top market prices.

11.395

BLUE BIRD BRAND

SCARLETT & Co

Cnr MARKET & COLLINS Sts

MELBOURNE

NATIONAL TRUSTEES

Executors & Agency Company of Australasia Ltd.

DIRECTORS:

HON. WALTER MADDEN, Chairman and Managing Director.
EDWARD FITZGERALD, Esq., LL.D. MICHAEL MORNANE, Esq. HON. DUNCAN E. McBRYDE.
HENRY MADDEN, Esq. Brigadier-General H. E. ELLIOTT, C.B., C.M.G., D.S.O., D.C.M.

This Company Acts as Executor or Joint Executor of Wills, Administrator, Trustee of Settlements, and Agent for Absentees under Power of Attorney.

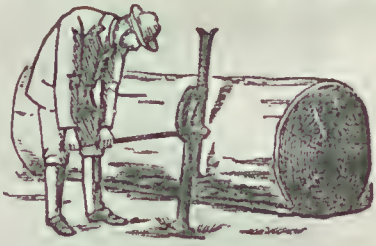
MONEY TO LEND ON BROAD ACRES AND FARM LANDS.

Offices—113 Queen St. (Corner of Little Collins-st.), Melbourne

J. H. MACOBOY, Assistant Manager. HON. WALTER MADDEN, Managing Director.

"MONKEY" =AND= "WALLABY" JACKS

For GRUBBING TREES and STUMPS and GENERAL HEAVY LIFTING



Our complete illustrated catalog is free, if you have one use it, if you haven't WRITE US TO-DAY!

TREWHELLA BROS. Pty. Ltd., TRENTHAM

You'll Get More Milk from Cows

that are kept Healthy and Strong—when given every opportunity to satisfy their natural desire for a Tonic Food, such as provided in

"BONDO" SALT LICKS

"THE VITAL NEED TO ANIMAL LIFE,"

which are composed of the Purest Salt, with a carefully balanced proportion of other Medicinal Ingredients, that serve as a preventive of disease, keep the Cows in Good Health, contribute to a prolific yield of Pure, Rich Milk—Wise Dairy Farmers will find by experience that the Beneficial Results achieved make "BONDO SALT LICKS" indispensable. Then they are so economical; there's not a particle of waste, as each BONDO SALT BLOCK, which weighs 10 lbs., is solid, yet soluble, and serves to the last grain.

Made in Australia to Suit All Conditions

Prices and Full Particulars Forwarded upon Application to

Bond Manufacturing Co. Ltd. 115 Queen's Bridge St., SOUTH MELBOURNE

'Phones—Central 6145, 6157

THE USE OF

SICKLE BRAND

FLORIDA SUPER

ENSURES INCREASED RETURNS

TO

FARMERS—GRAZIERS—DAIRYMEN

WHEAT

HEAVIER DRESSINGS OF **90 to 112 lbs.** PER ACRE INCREASE SUBSTANTIALLY THE YIELD OF **WHEAT**

MILK — WOOL

A TOP-DRESSING OF 1 CWT. OR UPWARDS PER ACRE ON PASTURE LAND, INVOLVING AN ANNUAL OUTLAY OF **ONLY A FEW SHILLINGS**, IMPROVES THE QUALITY OF THE GRASS—MAKES CATTLE AND SHEEP MORE HEALTHY—ENABLES THE LAND TO CARRY MORE PER ACRE—RESULTING IN GREATER RETURNS, AS THE CASE MAY BE, OF BOTH **MILK AND WOOL**

WRITE FOR PARTICULARS **CUMING, SMITH & CO. PTY. LTD.**

65 WILLIAM STREET, MELBOURNE

NOXIOUS WEEDS

FARMERS—don't let the weeds get a first mortgage on your land. The Most Effective, Safest, and Cheapest Method of ERADICATING WEED PESTS is by using

"CACTUSENE" A—B—and—C GRADES

Applied by means of an Atomiser, as shown below

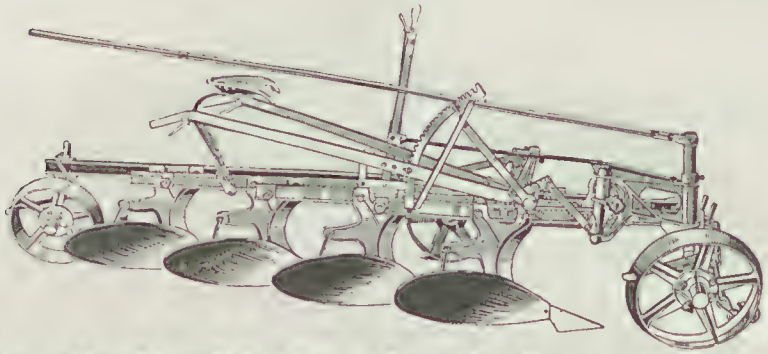
Easiest Method of Killing
BLACKBERRY,
CALIFORNIAN THISTLE,
BATHURST BURR,
ST. JOHN'S WORT,
SWEET BRIAR.

Easiest Method of Killing
CACTUS,
LANTANA,
RAGWORT,
STINKWORT,
BOX THORN.

RECOMMENDED BY THE DEPARTMENT OF AGRICULTURE OF VICTORIA

We have hundreds of Testimonials from satisfied clients.

Manufactured by **CACTUS ESTATES LTD.,** 60 QUEEN ST. MELBOURNE



INTERNATIONAL
ADJUSTABLE-BEAM
MOULDBOARD PLOWS
No. 90 Series

These plows are built specially for Australia and Australian farmers who have used them, find that they meet every requirement demanded of plows of this kind. The fact that they are adjustable to cut different widths of furrows makes them especially desirable plows to use.

They are equipped with long easy turn mouldboards and standard D-foot shares. All levers are strong and easy to operate; the cut-off lever regulating the width of the front furrow, as desired. An all-screw adjustment is used, dispensing with wedges and clamps. The frames of straight I-beam sections of high carbon steel supply an excellent means of using the screw adjustment, as the holes provided for this, being in the channels of the I-beams, do not weaken the beams, as is the case with the ordinary oblong sections used on other plows.

These plows are fully illustrated and described in the International plow pamphlet. Ask the International agent in your district for a copy, or, if you prefer, write us direct.

International Harvester Company of Australia Pty. Ltd.

543-555 BOURKE STREET, MELBOURNE

Agencies throughout Victoria and the Riverina

THE JOURNAL

OF THE

Department of Agriculture

OF

VICTORIA.

Vol. XVIII. 21st June, 1920 Part 6.

REPORT ON THE NINTH VICTORIAN EGG-LAYING COMPETITION.

1st April, 1919, to 31st March, 1920.

By A. V. D. Rintoul, N.D.D., Chief Poultry Expert.

The principal feature in connexion with the above competition was the introduction of trap-nests amongst the teams of six birds. It has for some time been recognised that the aggregate score for six birds was insufficient information for the average competitor, as in saving cockerels for subsequent breeding purposes from a team of six birds, bred from as such, there always exists the danger that a son of the poorest layer might happen to be selected instead of one from the best.

Curtailment by Cabinet of the departmental vote, coupled with the very high prices prevailing for building materials, delayed the erection of additional single pens, consequently trap-nests were introduced, the trap front being designed by Mr. L. Smith, Assistant Poultry Expert, and the rest of the nest was designed by Mr. W. Rugg, who is in charge of the poultry section at the Werribee Research Farm.

Arguing from the old saying—that it is a simple matter to lead a horse to the water, but sometimes impossible to get him to drink—a few pessimists were inclined to predict disaster for the trap-nest venture, on the ground that, while trap-nests and birds could be brought together, it was not possible to force the birds to lay in the nests, and failure was, therefore, certain to arise owing to the unrecorded eggs.

Trap-nest Results.

Table I. shows the monthly results from each of the four sections—light breeds—(1) wet mash, (2) dry mash; heavy breeds—(3) wet mash, (4) dry mash. It was, of course, only to be expected with birds quite unaccustomed to trap-nests, and with the

Egg Exhibit Prepared for Show in Honour of H.R.H. the Prince of Wales.

system somewhat strange to the staff, that the results for the first month should show a fairly high percentage of eggs laid outside the traps. Mr. A. Enticknap's team of six white Leghorns, fed on the dry-mash system, out of a total of 1,573 eggs for the year laid only two outside the traps, one of these being laid during the first week of the competition. On the other hand, Mr. R. E. Exelby's white Leghorns, on wet mash, laid 272 (out of a total of 1,107 eggs) outside the nests.

During the season 1907-8, at the Maine, United States of America, Experimental Station, Dr. Raymond Pearl had, out of a grand total of 58,374 eggs, an average of 4.01 per cent. laid outside the traps, this being the first season the method was adopted. The Burnley figures for last year show an average of 3.29 per cent. eggs laid outside the traps.

Dr. Pearl, in his report, writes as follows:—"All experimental studies of any magnitude of fecundity in the domestic fowl must rest ultimately upon trap-nest records. In spite of the fact that so much trap-nesting work has been done in the various experimental stations, there has never been any careful study, so far as the writer is aware, of what may be termed the residual error of trap-nest records. By residual error is meant that error which remains after all instrumental sources of error, such as, for example, failure of a nest to operate owing to its being out of repair, have been eliminated. It will always be the case that some birds will at some times lay outside the trap-nest. The important point to any one concerned in the accuracy of the records relates to the amount of this error."

Greater Accuracy in Single Pens.

Twelve years ago, the advent of the single-test pen was hardly looked for, and probably only single-test pens would now be used at Burnley but for the expense of erection; at the same time, however, the enormous value of accurate records to the poultry industry is well-nigh incalculable, and it is desirable, if possible, to eliminate even such a small margin of error as 3.29 per cent., absolute accuracy being only possible in the single-test pen.

Once more, however, let it be impressed upon breeders that, for breeding purposes, figures alone must not be relied upon. *The first essential is a sound and vigorous constitution,* and is of far greater importance in establishing a flock than a mere matter of some eighteen or twenty eggs. I have personally seen at laying competitions birds which laid upwards of 300 eggs in a year, but, except for colour, they had no claim to the breed under which they were entered, and others that were too weak constitutionally to be considered suitable breeders.

Competition Results.

Analyzing the results, we find that the highest scores in the competition are from the trap-nests, and not from the single pens. Mr. P. N. Tilley's white Leghorn No. 1 laid 312 eggs in the traps; whereas the highest score in the single test was Mr. Jack Ryan's white Leghorn (dry mash), 303. In heavy breeds, Mr. C. E. Graham's black Orpington No. 2 was trap-nested to lay 290 eggs, while Mr. G. H. O'Brec's Rhode Island red laid 287 in a single-test pen. On the other hand, the average number of eggs laid per bird in the trap-nest section is 206, as against 212½ per bird in single test. It should be borne in mind,

Mr. J. W. Leydon's Winning Team. Heavy Breeds—Dry Mash. 1,458 eggs.

Mr. P. N. Tilley's Winning Team. Light Breeds—Wet Mash. 1,575 eggs.

Mr. S. Andrew's Winning Team of Black Orpingtons. Heavy Breeds—Wet Mash. 1,553 eggs.

however, that there were 600 birds trap-nested as against 150 single-tested; the average for all birds throughout the competition being 207½ eggs. It is also reasonable to assume that the competitors endeavoured to place their best birds in the single test, and subsequently selected the next best for trap-nests.

System of Feeding.

The most important feature is the fact that pea-meal was entirely dispensed with, not from choice, but because it was not possible to secure a continuous supply; but, notwithstanding this, the yield of eggs was well maintained during the year.

Wet Mash.—During the first six months of the year the birds fed on wet mash received the following ration:—

Wheat bran (by measure)	1½ parts
Wheat pollard (by measure)	2 parts
Oat pollard (by measure)	½ part
Chaffed greenstuff	1 part.

This mixture was moistened with soup made from livers and bullocks' heads, and a particularly good sample of bone charcoal was added at the rate of half-a-pint per 100 birds. About 2 ounces of meat to every six birds were mixed with the mash once a week, as well as raw minced onions to the extent of 2½ per cent. of the whole mash.

Evening feed consisted of the following grains:—

Wheat	3 parts
Oats	1 part
Maize (crushed)	½ part

given as a mixture (roughly, 2 ounces per bird); whilst, during the day, ample green feed was given (according to the season), such as kale, silver beet, milk thistles, lucerne, green barley, and rape. At all times shell grit, crushed oyster shells, quartz grit, and charcoal were kept before the birds.

After the first six months the wet mash was altered, and fed as follows:—

Wheat bran (by measure)	2 parts
Wheat pollard (by measure)	2½ parts
Chaffed greenstuff	1 part.

Soup, meat, onions, charcoal, and greenstuff were allowed as before. Maize was cut out of the grain mixture, which was—five nights a week—wheat only; the other two nights the meal consisted of two parts wheat and one part oats.

Dry Mash.—During the first six months the mixture consisted of—

Wheat bran	4 parts
Wheat pollard	3 parts
Oat pollard	1 part
Charcoal	1 per cent.

Minced liver was given in a dry condition, three times weekly, at the rate of 2 ounces to six birds, and 1 ounce of raw minced onions was fed weekly to every six birds. During cooking, a sprinkle of salt was added to the livers, which were always fed to the birds in a cooked state. Grain, greenstuff, &c., were of the same quantities as fed to

the west-mash section. It was reported in New South Wales a few years ago that the dry-mash section at Burnley received some wet mash. This was quite incorrect, as no wet mash has at any time been allowed to the dry-mash competitors.

The cost of food was approximately 2¾d. per bird per week. The various samples of foodstuffs supplied varied so much that the nutrient ratio cannot be expressed in decimal points. The generally mediocre quality feed received was fed to the best advantage, and great credit is due to Mr. Macauley, the curator, for getting as good results as he did in the circumstances.

Mr. J. Ryan's White Leghorn, which laid 303 eggs in the Single Test for White Leghorns—Dry Mash.

Weather Conditions.

These were more or less normal until the spring; an early and very dry summer followed, with occasionally rather high temperatures. 102 degrees was recorded on 7th November, 107 degrees on 21st December, and in February, after a temperature of 109 degrees, previous records were broken on 16th February, when 114 degrees was reached.

Deaths.

Out of 750 competing birds, 30, *i.e.*, 4 per cent., died during the year from various causes. This was not an unreasonable number, particularly in view of the fact that the parents of these birds, as well as the birds themselves, did not at all times have the pre-war quality of food so necessary to achieve the best results; in fact, it was quite a treat when either really good wheat or pollard was received at the competition, and until a higher quality of foodstuffs can be regularly maintained there can be but scant prospect of further world's records.

Mr. G. H. O'Bree's Rhode Island Red. 287 eggs.

Market Price of Eggs.

The eggs were sold to Messrs. R. G. Wilson and Coy. at 1d. per dozen over the highest quoted price in Wednesday's and Friday's morning papers, the Department of Agriculture paying cartage to the city. The revenue from the sale of eggs gave an average of 1s. 6¾d. per dozen, less cartage. It must not, however, be concluded that everybody can secure this price for eggs. Great injury is done to the industry by exaggeration. The country producer would probably get a lower average price, and, in addition, generally have to pay selling commission and

rail expenses. A flock, however, that averaged as low as fourteen dozen eggs per bird, at 1s. 4d. per dozen throughout the year, after paying 12s. per bird for the feed bill, would still show a good margin of profit, exclusive of interest on capital, &c.

System of Marketing.

The eggs were packed in Lima cases holding 36 dozen eggs, each egg being packed in a wire-filler, as shown in the illustration.

Mr. W. McDougall's (Kelvin Poultry Farm) White Leghorn, which laid 297 eggs in Single Test for White Leghorns—Wet Mash.

A striking peculiarity about the market reports for agricultural produce is the fact that, while there is a more or less definite price quoted for prime quality in everything else, in the egg market the low-grade article apparently forms the basis for determining the selling price, instead of the f.a.q. grade. For example:—

"Butter.—Official quotations are as follow:—

No. 1 grade, 214s. 8d.; No. 2 grade, 196s.; and No. 3 grade, 191s. 4d. per cwt.

Honey.—Prime, clear, extracted quoted at 6½d. per lb.; medium to good, at from 5¾d. to 6d.; and dark and candied at from 4½d. to 5d. per lb.

Oats—Prime milling oats worth 5s. 9d. to 5s. 10d. yesterday, and feed oats, 5s. 5d. to 5s. 6d.

Potatoes.—Prime Carman were quoted at from £6 10s., good at from £6, and medium and inferior at from about £5, according to quality.

Hay.—Manger trussed was in demand from £11 10s. to £12 10s., manger sheaves at from £8 10s. to £9, and chaffing sheaves at from £6 5s. to £7 10s."

Eggs, on the other hand, were quoted on the same day as follows:—

"Ordinary lines had quittance at from 1s. 4d. to 1s. 5d. per dozen, and private consignments at from 1s. 6d. to 1s. 8d.; selected newly-laid eggs at up to 1s. 10d.; and specially packed and delivered lots at a still higher price."

This reference to a "still higher price" appears with more or less monotonous regularity, without any one being enlightened as to the actual price or what system of packing was adopted to obtain this extra price. Perhaps it should be remarked that since the middle of March an improvement in the system of reports in one of the papers has taken place, in that new-laid eggs are now quoted before other grades.

Having established the remarkable fact that eggs alone are sold *on the basis of poor quality*, with slight increases for what are termed "private" or "special" lines, it is necessary to point out that this is one of the greatest barriers to success that the poultry industry has to contend with, seeing how great a libel such a claim should amount to. *What should decidedly be the "ordinary" egg is the egg laid by the average hen, pure and fresh, easily digested, highly nourishing, and palatable.* Instead of this, the "ordinary" egg has come to be considered on our markets as some low-grade article, which is totally unsuited for either boiling or poaching, and, in fact, barely fit to be used by bakers and pastrycooks.

To re-establish the industry, drastic reform is necessary in dealing with the "ordinary" egg, *and improvement must be made both in packing and grading.*. The low-grade egg comes in greatest numbers from districts north of the Dividing Range, where the heat is greatest, and where, in summer months, green feed is almost unobtainable, and where water is scarce and insufficiently cool. It came as a shock to the writer, and it is to be hoped that readers will be even more shocked, to learn that **during February and March 75 per cent. of eggs consigned from Northern Victoria to one of the leading egg sales rooms in Melbourne are frequently rotten.**

Reasons for Bad Eggs.

Fortunately, however, both reason and remedy are available.

(1) On the average farm in Victoria the roosters are *not* removed from the flock and penned up separately after September, and the result is that all eggs laid during the summer months in the warmer districts are seriously damaged after a few days owing to their being fertile.

(2) Very few farmers keep sufficiently large flocks of poultry to be able to consign eggs direct to the market, consequently most "farm" eggs are sold to the storekeeper.

(3) Sometimes the eggs are forgotten, and sometimes—particularly towards the end of the summer, when the price is likely to rise—the farmer keeps back his eggs, and perhaps thinks little or nothing of holding them for three or four weeks at a time, with the result that they are practically unmarketable.

(4) The storekeeper doesn't really care much about the egg trade; he may carry the eggs all day in an open cart, exposed to the burning sun; and if, in consequence, the egg business doesn't pay him, what does it matter, seeing how simple it is to increase the price of other commodities and thereby recoup himself?

(5) *Packing.*—Eggs must be packed with clean, dry, and odorless material, which in remote country districts is not always readily available. (Anything damp or musty will quickly impart a taint to eggs.)

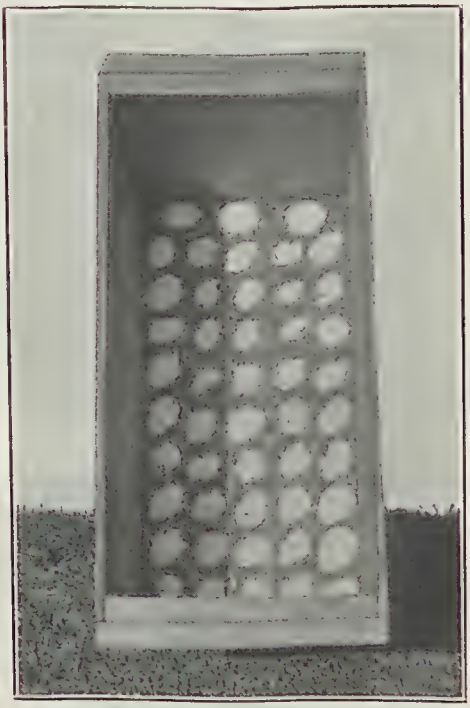
(6) *Breakages in Transit.*—It has not been possible to arrive at any definite percentage of loss for breakages. A deduction of six eggs to the case is sometimes made, which is equivalent to about 2 per cent. Many of the best class of country eggs, beautifully packed, do not pass through the sale room, but are consigned direct to grocers and others, in which cases breakages would be due to rough handling in transit. Some firms sell eggs "with all faults," consequently the buyer stands any loss, which is not then debited to the consignor, as is usually the case.

The Remedy.

While it is within the scope of the writer to suggest various remedies, the stumbling block is how to introduce these remedies to the careless farmer or the indifferent storekeeper, neither of whom is ever much in evidence when lectures are given in country districts. The writer, a number of years ago, was present at some Highland games in Canada, when a well-known local lad was awarded second prize for sword dancing. An uproar ensued, in which the young man passionately declaimed, "The judge cheated, the judge cheated, 'a canna' be beat!" How many farmers belong to the "'canna' be taught" class? Unfortunately, a high percentage are still misguided enough to think that lecturers—holding Government appointments—must *ipso facto* be idle theorists with no practical knowledge. These farmers are a menace to the community, especially at the present time, when increased production is the only visible solution of the appalling increase in the cost of living, and when, therefore, all assistance towards improved methods in marketing should be eagerly sought after.

The illustrations on pages 331-2 show the proper methods of packing eggs for market. Straw chaff is an excellent material to use in packing, and in the packages illustrated from photographs taken by the writer 10 lbs. of chaff was the average quantity used to pack 24 dozen eggs. At this rate, one bag of straw chaff would suffice for a little more than six cases of eggs. The chaff should be returned in the empty cases, so that this is a cheap method of packing. Each of the nine rows should consist of five eggs, and with three additional eggs at one end there would be four dozen in each layer, and there are six layers in each case.

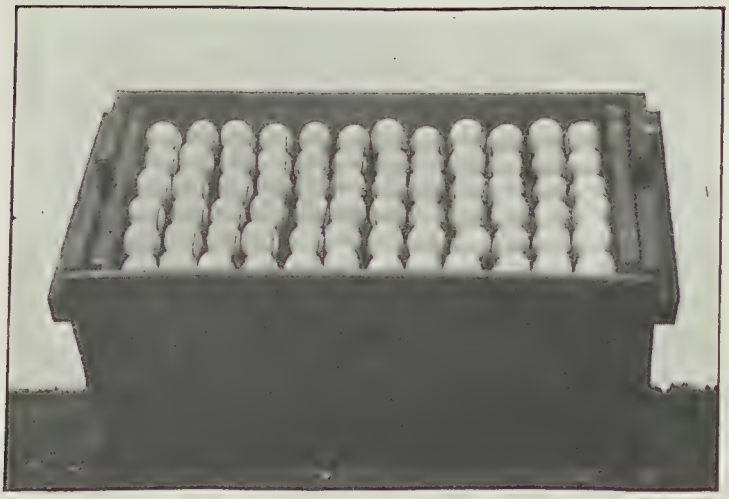
In the illustration on page 331 it will be noticed that when the case is fully packed the top layer projects slightly over the top of the case, say, from 1 to 2 inches. The case should not be shaken until the



Packing Eggs—the Bottom Row.

The Finished Case.

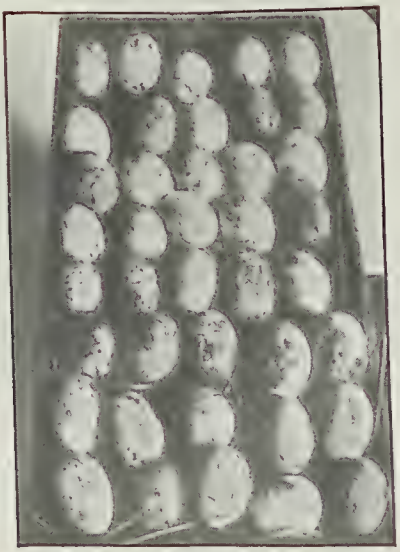
Packing Eggs—Top Row.



Eggs Packed in Lima Case (wire fillers).

top is reached. It will be found far safer to pack on the tight side and risk cracking an odd egg on the top, rather than have the whole case loosely packed, with consequent continual breakage. Three double handfuls of chaff should be placed on the bottom of the case before the first layer of eggs is packed. The eye—unconsciously, perhaps—travels down the centre of a case, so that it is a common practice with skilled—if at times unscrupulous—packers to put the larger eggs in the centre and any smaller ones on the outside.

It must be admitted that, at present, the seller generally gets the worst of the deal. Unpacking eggs is a fruitful source of breakages, which, nevertheless, are debited to the producers, and in some markets the wholesale buyers themselves re-pack; in such cases, the temptation to crack all small-sized eggs proves somewhat alluring. The returns received by one of the most careful packers in the State show about 1 per cent. cracked and about ½ per cent. broken, results probably



Country Eggs—How Not to Do It.

mostly brought about in the unpacking. Another excellent method of marketing eggs is by means of the copper-wire fillers, which are usually padded either with paper or stout cloth, and many producers use the cardboard fillers, which are sold in sets of 25 dozen to fit in the ordinary petrol case.

A very interesting description of the Danish poultry industry was given by Mr. R. T. Mackenzie in the March issue of this *Journal,* but the Danish system of egg circles, while affording the best possible solution of the troubles of the poultry-farmer, is not practicable in all the country districts of Victoria. Denmark has an area of 55,000 square miles, and a population of 3,000,000, being about 55 persons to the square mile. Victoria, on the other hand, has an area of almost 88,000 square miles and a population of only one-half that of Denmark, which means that she has only eighteen persons to the square mile. Consequently, the expense of egg circles here makes that system at present

impracticable for us, except in the vicinity of a few of the largest towns and cities. With increased facilities for transportation, however, some system of closer co-operation than exists at present is not merely a necessity, but will prove an undoubted success.

Eggs Not Credited to Individual Birds.

At the commencement of the competition for the first 30 days (April), out of a total of 6,757 eggs no less than 1,055 were laid outside the trap-nests, being 15.61 of the aggregate, a state of affairs that was undoubtedly somewhat alarming. In May, however, the aggregate for 28 days rose to 7,295, with a decrease of 737 in eggs laid outside the traps, a percentage of 10.10. Of the 18,448 eggs laid up to the end of July, which marked the close of the four months' winter test, 1,355 were unallotted. In all, 32,500 eggs were laid during the four months' winter test; 3,147, or 9.68 per cent. of the total, were laid outside the traps. For the remaining eight months, 80,383 were laid; 570, or 0.71 per cent., being laid outside the traps. This may well be considered as approaching the irreducible minimum. Up to the end of October, the proportion of eggs laid outside the nests had, month by month, diminished enormously; after that time, the tendency of the heavy breeds, in particular, to go broody and lay in a secluded corner of the roosting-shed began to manifest itself by an increase in unallotted eggs from 0.25 per cent. in October to 1.10 per cent. in January. After the end of January, the poorer layers and persistent brooders began to stop laying, and there was again a gradual improvement in the percentage of eggs recorded in the traps.

In the recently started competition there is a very marked improvement in the trap-nest work, as, for the first 28 days, out of a total of 402 birds laying 4,387 eggs, only 105, or 2.39 per cent., as against 15.61 per cent. for the month of April, 1919, were found outside the traps. Should this improvement be maintained throughout the next couple of months, the final returns will make an excellent showing.

Weight of Eggs.

The most disappointing feature of the competition was the alarming decrease in the average weight per dozen eggs, nearly half the total number of pens failing to average 24 ounces per dozen Undoubtedly, the moderate quality of the food had some bearing on this result. At the same time it is a matter that cannot be overlooked by breeders this hatching season. For export purposes it is desirable to pack something better than the 2-oz. eggs which run 15 lbs. per long-hundred case, as 16 to 17 lbs. per 120 make better prices.

Consistent Laying.

While no exceptionally high scores were made by the groups of six birds, the Black Orpingtons, owned by Mr. S. Andrew, recorded a very fine performance for the period from 22nd May to the 19th November, the weekly tallies being 36, 34, 34, 37, 33, 34, 32, 35, 30, 37, 33, 34, 35, 37, 38, 38, 38, 40, 39, 39, 34, 36, 32, 30, 36, 37—a total of 918 eggs in 26 weeks. Mr. Tilley's White Leghorns (wet mash), 1,575, and Mr. A. Enticknap's White Leghorns (dry mash), 1,573, were excellent scores, and serve to demonstrate that there is very little to choose between the two systems of feeding, although the extra eggs laid in the winter (when eggs were dearer) by Mr. Tilley's team

enabled him to win, by a margin of 3s. 2d., the prize for highest market value of eggs, although his birds scored only two more eggs for the year.

Is There a Distinct Laying Type?

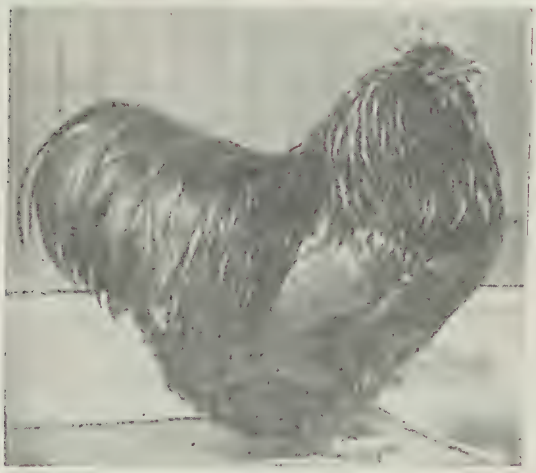
So far as Black Orpingtons are concerned, there can be little doubt that there is a distinct difference between the type which in Victoria at present wins prizes as a show bird and the Black Orpington which makes big scores in the laying competitions. What do we actually understand to be the true meaning of the word "type"? According to the eminent English writer on poultry, Mr. Edward Brown, "To describe type is difficult, but it may be explained as the combination of characters which give the race its individuality and distinguish it from others. Into type the shape, conformation, size, and carriage enter more fully than coloration of plumage." It must also be remembered that where, in the past, fanciers have invariably been men interested in birds solely from the exhibition point of view, at no time have those interested in laying competitions had any vote at all regarding type. As a firm believer in the imperative necessity to adhere to type, I state confidently that it must be one that gives a reasonable prospect of prolific egg-laying—a quality the modern show Black Orpington can hardly claim. Mr. Hadlington, the New South Wales Poultry Expert, lecturing recently on "Standard Breeds of Poultry," is reported as follows:—"Dealing with the Orpington . . . . the utility breeder would have none of the show bird, and the exhibitor could have no respect for the so-called utility Orpington. Here we had two distinct classes of bird (they could scarcely be called types) passing as Orpingtons, and there was becoming utter confusion as to what was Orpington type. Yet there was the standard to consult, which had not been altered during his experience. The anomaly was that the fancier, for the most part, was breeding birds more nearly answering to the Cochin type and feathering, less the feather on the legs, than to anything else one could describe. On the other hand, we had the so-called utility type, which was in many cases much of a combination of Orpington, Langshan, and Rock, giving appearance of something approaching the type of the Rhode Island breed. Between these extremes there was imminent danger of the true Orpington type being lost, and, with it, its sterling utility qualities."

The most important part of the foregoing, from the Victorian point of view, is this:—The best of the Victorian Black Orpingtons undoubtedly are leading the world at the present moment in egg production, and now from an adjoining State comes the charge that they are not in any way true to type, being "a combination of Orpington, Langshan, and Rock." What is an Orpington? Referring again to Mr. Edward Brown, as an authority of international repute, we find in his *Races of Domestic Poultry* the following:—

> *Orpington, Black.*—This variety was originated by the late Mr. William Cook, then living at Orpington, Kent, and he gave that cognomen to the new fowls, as he was fully justified in doing. It will be better to describe the process of evolution in his own words:—"I commenced mating Minorca cocks with black Rock hens, then Langshan cocks with Minorca Rock hens. I may mention that I used birds *which exhibitors would have termed*

useless—Minorca cocks with red in their ear-lobes, the black Plymouth Rock hens thrown on one side by exhibitors as sports only from the grey, and the clean-legged Langshans of no use whatever to breed birds *such as were required by the standard of the Langshan Club* at that time. Such birds as these were put on one side for laying purposes."

The Orpington as Originally Introduced.
[Reproduced from *Races of Domestic Poultry*, by Edward Brown.]



What the Exhibitors are Now Producing.

Mr. Cook goes on to claim that these rejected specimens are generally admitted to be the best layers. Mr. Brown continues by stating that it would be erroneous to assert that all Black Orpingtons have

descended in the manner described above; in some strains there has evidently been a considerable infusion of Cochin blood; in fact, many more nearly resemble, in brilliancy of plumage and shape, the Black Cochins exhibited about 1880, differing merely by absence of heavy hock and leg feathers.

Black Langshans.
[Reproduced from *Races of Domestic Poultry*, by Edward Brown.]

The Black Orpington was actually introduced by Mr. Cook in 1886, and was greatly boomed. A black-plumage fowl, it had special recommendations for residents in suburban and manufacturing districts, while its useful qualities and undoubted hardihood were greatly in its favour.

It will be seen, therefore, that the present-day Victorian Black Orpingtons are on the same lines as those introduced to the world by

the originator of the breed. Illustrations from Mr. Brown's *Races of Domestic Poultry* show the type of Black Orpington at the time the standard was framed, also the Black Langshan. About the latter, Mr. Brown writes:—

> Then came the introduction of the Black Orpington, which was acknowledged to be half Langshan. With the exception of being a little rounder in body and shorter in the leg, the differences are few. But, unfortunately, the *exhibitors* of Langshans began, about 1889, to change the type, with the object of getting away from the Orpington, and bred for length of leg to such an extent that the exhibition Langshan is now a leggy monstrosity, stilty, often weak-legged, but naturally heavier in bone and smaller in body than of yore. . . . The result has been disastrous in

Mr. C. E. Graham's Official World's Record Black Orpington. 335 eggs, 1917-18.

> Britain. For practical purposes it is scarcely ever bred, and we could not advise any one—in spite of the quality of the egg—to adopt the modern show Langshan as an economic fowl. Fortunately, a few breeders have refused to be led away from the older type, and an attempt is being made to bring forward again what is known as the Croad Langshan.

Mr. Brown's denunciation of the absurdities of the exhibition breeder are, therefore, decidedly scathing.

A study of the present-day winning type of Black Orpingtons at shows will at once make clear that, while there are undoubtedly faults on both sides—show and utility—there can be no question that the aim of the utility breeder far more nearly approaches the original conception of the breed than does that of the exhibitor. Unfortunately, a

number of people do not shoot very straight, and, in consequence, fully 50 per cent. of the birds competing in the various egg-laying tests in this State fall far short of the goal towards which all poultry-breeders

Mr. R. R. Christie's Black Orpington, which laid 274 eggs in Single Test for Black Orpingtons—Wet Mash.

Mr. Christie's Geelong Single Test Winner. 339 eggs.

should strive. According to the standard, the matured Black Orpington should weigh from 7 to 8 lbs., yet specimens under 5 lbs. are sent to those competitions, whose managers are too anxious to secure entries to bother about what birds weigh so long as their entrance-fee is paid.

It would perhaps be well to remind breeders of a rule in the Burnley competitions, which reads, "Any bird which in the opinion of the poultry expert is not considered a fair specimen of the breed, will be returned." Toleration has now been carried almost to the point of laxity, consequently this warning should be taken with the utmost seriousness.

Healthy criticism is at all times helpful, but the great interest aroused of late years by the laying competitions has caused an anxiety on the part of exhibitors that reminds me forcibly of an advertising campaign in the United States. A certain beer was widely advertised as "The beer that made Milwaukee famous." Very shortly afterwards, another city produced a beer that was equally widely advertised as "The beer that made Milwaukee jealous." A critical public can quickly form their own conclusions regarding the respective brands of Black Orpingtons.

Mr. R. R. Christie's Geelong Winner. 339 eggs.

For comparative purposes, photographs have been included of Mr. C. E. Graham's Official World's Record Black Orpington, which laid 335 eggs at the Burnley Competitions, 15th April, 1917, to 14th April, 1918, and of Mr. R. R. Christie's Black Orpington, which laid 339 eggs at the Geelong 1919-20 competitions. Though the latter competitions were not conducted officially, there is, I think, no reason to doubt the accuracy of the scores.

Management.

Mr. Macauley, as usual, had charge of the feeding arrangements and management of the trap-nests, and the final results were very satisfactory, particularly in view of the foodstuffs and other difficulties. The extra work, both manual and clerical, which was involved by trap-nesting 600 birds was very considerable.

The Late Mr. Alfred Hart.

During the currency of the competition the poultry world lost one of its oldest and best friends by the death, on the 18th February last, of Mr. Alfred Hart, for many years Chief Poultry Expert in the Victorian Department of Agriculture.

Regulation hours, holidays, annual leave, &c., none of these had any meaning to Mr. Hart throughout the 26 years he was a member of the Departmental staff. His only desire was to maintain the dignity and further the interests of the Department, and the development of the poultry industry and the improvement of the rabbit export trade owe more to him than is generally known.

Financially poor because of his unbounded generosity, he was rich indeed in the good wishes and affection of all those who knew him.

An Exhibit which Received Special Notice by the Prince of Wales at the Special Show held on 29th May.

Table I.

Monthly Results.

Percentages of Eggs Laid Outside the Trapnests.

	Light Breeds—Wet Mash.			Light Breeds—Dry Mash.			Heavy Breeds—Wet Mash.			Heavy Breeds—Dry Mash.			Weighted Average		
	Eggs Laid.	Unallotted.	Per cent. Unallotted.	Eggs Laid.	Unallotted.	Per cent. Unallotted.	Eggs Laid.	Unallotted.	Per cent. Unallotted.	Eggs Laid.	Unallotted.	Per cent. Unallotted.	Total Eggs Laid.	Unallotted.	Per. cent. Unallotted.
April (1–30, 30 days)	3,245	301	9·27	1,417	177	12·49	1,329	387	29·11	766	190	24·93	6,757	1,055	15·61
May (1–28, 28 days)	3,138	154	4·90	1,616	177	10·95	1,528	246	16·09	1,013	160	15·79	7,295	737	10·10
June (May 19–July 2, 35 days)	3,881	247	6·36	2,014	129	6·4	2,391	312	13·04	1,425	140	9·82	9,711	828	8·52
July (July 3–31, 29 days)	3,561	181	5·08	2,101	67	3·18	1,986	203	10·22	1,089	76	6·42	8,737	527	6·03
August (Aug. 1–Sept. 3, 34 days)	4,425	81	1·83	3,174	35	1·10	1,689	3	0·17	1,592	66	4·16	10,880	185	1·70
September (Sept. 4–Oct. 1, 28 days)	5,004	25	0·49	2,920	4	0·13	2,045	9	0·44	1,304	1	0·07	11,273	39	0·34
October (2–29, 28 days)	4,935	10	0·20	2,903	3	0·10	1,873	9	0·48	1,212	6	0·49	10,923	28	0·25
November (Oct. 30–Nov. 26, 28 days)	4,792	12	0·25	2,741	18	0·65	1,661	23	1·38	1,020	15	1·47	10,214	68	0·66
December (Nov. 27–Dec. 31, 35 days)	5,435	24	0·44	3,290	14	0·42	1,881	17	0·90	1,088	18	1·65	11,694	73	0·62
January (1–29, 29 days)	4,033	27	0·66	2,311	15	0·64	1,433	29	2·02	796	24	3·01	8,573	95	1·10
February (Jan. 30–Feb. 25, 27 days)	4,019	30	0·74	2,175	10	0·45	1,352	12	0·88	780	6	0·77	8,326	58	0·69
March (Feb. 26–March 31, 35 days)	4,010	11	0·27	2,214	4	0·18	1,401	4	0·28	875	5	0·57	8,500	24	0·28
Total	50,478	1,103	2·18	28,876	653	2·26	20,569	1,254	6·09	12,960	707	5·45	112,883	3,717	3·29

FINAL SCORES.

Department of Agriculture, Victoria.

NINTH EGG-LAYING COMPETITION, CONDUCTED AT THE SCHOOL OF PRIMARY AGRICULTURE AND HORTICULTURE, BURNLEY, COMMENCED 1ST APRIL, 1919, CONCLUDED 31ST MARCH, 1920.

RECORD OF EGGS LAID TO THE 31st MARCH, 1920.

Section A.—Groups of Six Birds Trapnested.

Pen No.	Competitor.	Hen. 1.	2.	3.	4.	5.	6.	(x).	Total to 31st March, 1920.
Class 1.—Light Breeds (White Leghorns), except Pen 19 (Black Minorcas), Wet Mash.									
23	P. N. Tilley ..	312	272	262	264	190	264	11	1,575
38	C. Ridley ..	186	216	259	261	267	223	9	1,421
15	J. Wharton ..	245	222	229	223	258	225	16	1,418
6	Geo. White ..	255	263	239	190	214	192	31	1,384
1	Montuna P.F. ..	270	252	(*d*) 204	193	238	204	16	1,377
20	G. McDonnell ..	238	242	252	204	243	183	10	1,372
24	Alf. Canning ..	251	247	223	247	216	167	9	1,360
27	W. M. Bayles ..	212	230	181	210	261	237	18	1,349
5	Miss M. T. Kidd ..	196	296	196	221	204	191	34	1,338
2	Murphy Bros. ..	219	209	232	197	225	220	21	1,323
26	W. K. Mitchell ..	213	185	227	216	262	198	6	1,307
9	H. T. Mason ..	192	260	240	214	246	100	51	1,303
46	A. J. Watts ..	235	202	210	211	233	198	7	1,296
10	H. Miller ..	168	244	253	196	229	189	15	1,294
36	A. A. Harvey ..	174	235	232	223	250	153	27	1,294
39	N. Meyers ..	271	222	169	228	183	208	9	1,290
13	G. Pocknall ..	246	218	263	257	133	(*d*) 132	36	1,285
35	Deep Spring P.F.	236	180	228	218	227	179	16	1,284
22	Mrs. C. G. Viney ..	192	(*d*) 211	188	246	161	255	15	1,268
7	J. B. Nicoll ..	230	21	162	260	190	188	14	1,265
45	Thos. Young ..	192	233	213	171	204	214	18	1,245
37	John A. Carter ..	217	71	212	261	237	195	28	1,221
8	H. W. Bond ..	166	188	185	211	200	235	16	1,201
25	H. Schmutter ..	186	244	166	198	212	181	7	1,194
29	W. Godden ..	253	192	171	175	161	217	18	1,187
18	J. Ogilvie ..	194	210	181	190	199	202	10	1,186
40	D. Gibson ..	209	167	219	167	223	191	9	1,185
21	E. A. Underwood ..	222	192	182	136	216	19	16	1,183
12	D. Hall ..	218	189	167	178	217	185	16	1,170
28	E. McDonnell ..	212	167	215	203	196	149	24	1,166
34	Mrs. J. Hall ..	218	180	166	187	223	176	7	1,157
41	Mrs. H. Stevenson	(*d*) 124	229	168	191	240	183	18	1,153
11	John Butler ..	183	200	167	206	143	196	50	1,145
16	C. R. Barrett ..	(*d*) 95	267	217	224	98	211	6	1,118
30	R. E. Exelby ..	154	151	155	86	146	143	272	1,107
33	J. Black ..	237	239	45	40	151	182	179	1,073
17	Herbert Bros. ..	(*d*) 50	241	(*d*) 94	197	237	222	7	1,048
14	Gedye Bros. ..	222	223	183	186	194	(*d*) 16	9	1,033
19	Champion P.F. ..	215	180	137	147	155	196	2	1,032
43	F. Gaskell ..	171	162	152	198	61	215	11	970
42	H. Hanbury ..	281	230	261	12	13	(*d*) 95	9	901

NOTE.—Death of birds marked thus (*d*).
Eggs laid outside nest denoted thus (x).

FINAL SCORES—*continued.*

SECTION A.—GROUPS OF SIX BIRDS TRAPNESTED—*continued.*

Pen No.	Competitor.	Hen. 1.	2.	3.	4.	5.	6.	(x).	Total to 31st March, 1920.
	Class 2.—Light Breeds (White Leghorns), Dry Mash.								
62	A. Enticknap ..	273	254	264	259	279	242	2	1,573
48	Geo. White ..	199	260	271	198	275	241	12	1,456
67	W. H. Robbins ..	248	236	145	224	208	229	98	1,388
64	C. Ridley ..	261	222	220	231	223	130	89	1,376
54	A. Chung ..	225	234	218	207	226	239	15	1,364
60	Kelly and Amess ..	226	200	183	195	266	167	113	1,350
51	J. W. Leyden ..	221	281	230	222	133	193	21	1,301
47	E. A. Underwood	226	183	236	243	(*d*) 151	248	4	1,291
55	J. Wharton ..	264	273	222	114	196	208	12	1,289
65	Gedye Bros. ..	212	242	206	240	183	173	15	1,271
61	Fulham Park ..	160	184	257	198	221	232	16	1,268
68	W. M. Bayles ..	244	(*d*) 199	197	244	160	181	9	1,234
70	H. Bunge ..	213	135	204	234	183	252	13	1,234
53	W. H. Dunn ..	208	175	(*d*) 133	231	213	180	65	1,205
49	J. Ogilvie ..	167	178	240	226	159	224	10	1,204
57	N. Meyers ..	(*d*) 147	190	244	221	177	209	4	1,192
58	J. O'L. Tabuteau ..	198	128	181	235	215	187	48	1,192
56	P. N. Tilley ..	(*d*) 29	215	247	238	233	205	17	1,184
50	E. McDonnell ..	207	216	12	259	226	249	6	1,175
59	Maitland P.F. ..	238	228	134	(*d*) 9	242	208	13	1,156
69	G. McDonnell ..	227	195	272	219	(*d*) 1	170	36	1,120
52	John A. Carter ..	168	245	106	105	187	205	20	1,036
63	E. Fox	186	225	23	120	251	197	15	1,017
	Class 3.—Heavy Breeds (Black Orpingtons), Wet Mash.								
81	S. Andrew ..	253	268	249	169	218	270	126	1,553
85	C. E. Graham ..	248	290	206	218	248	135	75	1,420
82	F. G. Clamp ..	227	226	179	211	214	256	27	1,340
79	Marville P.F. ..	230	193	181	193	229	251	19	1,296
72	A. D. McLean ..	198	135	182	247	221	160	142	1,285
88	Mrs. E. Griffiths ..	171	163	243	190	230	180	90	1,267
71	J. C. Mickelburough	176	206	221	136	137	267	112	1,255
87	F. R. N. Evans ..	180	184	258	209	154	204	36	1,225
77	D. Fisher ..	162	182	174	193	262	209	40	1,222
76	E. Pearson ..	244	200	182	183	174	168	40	1,191
86	Gedye Bros. ..	211	107	139	166	192	192	147	1,154
74	A. Bennett ..	207	160	225	192	113	209	28	1,134
83	F. C. S. Fredricksen	151	191	185	131	144	229	102	1,133
84	W. Hagley ..	203	110	157	190	232	114	72	1,078
78	R. R. Christie ..	236	138	20	201	(*d*) 191	204	48	1,038
75	Hall's Egg Farm ..	(*d*) 96	177	133	232	210	160	23	1,031
80	Ampere P.F. ..	(*d*) 41	198	113	178	130	160	127	947
	Class 4.—Heavy Breeds (Black Orpingtons, except Pens 92 and 97, R.I.R.), Dry Mash.								
94	J. W. Leyden ..	227	240	235	230	242	270	14	1,458
100	Gedye Bros. ..	138	171	202	216	181	258	159	1,325
93	C. F. Watts ..	213	259	165	229	214	202	43	1,325
95	R. R. Christie ..	243	273	169	157	183	220	18	1,263
96	J. C. Mickelburough	167	205	191	222	126	237	51	1,199
99	T. L. Eastaugh ..	229	164	217	(*d*) 179	230	105	31	1,155
91	A. D. McLean ..	199	230	195	72	187	202	64	1,149
97	D. Fisher ..	156	247	181	125	183	137	83	1,112
92	A. Bennett ..	151	168	198	169	195	142	35	1,058
98	Marville P.F. ..	136	139	205	(*d*) 98	215	184	17	994
90	Kelly and Amess	39	192	(*d*) 123	97	145	134	192	922

NOTE.—Death of birds marked thus (*d*).
Eggs laid outside nest denoted thus (x).

FINAL SCORES—*continued.*

Section B.—Individual Birds.

Pen No.	Competitor.	Breed.	Total to 31st March, 1920.	Pen No.	Competitor.	Breed.	Total to 31st March, 1920.
	Class 1.—Leghorns, Wet Mash.						
49	Kelvin, P.F. ..	White Leghorns	297	15	Alf. Canning ..	White Leghorns	230
14	Alf. Canning ..	,,	286	55	H. McKenzie and Son	,,	228
20	E. S. Jeffrey ..	,,	286	54	E. A. Underwood	,,	227
13	B. Brown ..	,,	279	10	Mrs. J. Roberts	,,	227
4	G. H. Answorth	,,	278	50	Kelvin P.F. ..	,,	226
39	Gedye Bros. ..	,,	277	42	Fulham Park ..	,,	224
1	G. McDonnell ..	,,	270	30	H. J. Bloomfield	,,	223
9	Mrs. J. Roberts	,,	262	52	G. Ochiltree ..	,,	219
40	Gedye Bros. ..	,,	259	11	John Christie ..	,,	218
43	F. W. McPherson	,,	257	17	R. E. Palmer ..	,,	216
22	A. J. Watts ..	,,	255	29	H. J. Bloomfield	,,	210
33	McCormack and Kinzell	,,	254	48	W. M. Bayles ..	,,	210
53	E. A. Underwood	,,	254	34	McCormack and Kinzell	,,	207
2	G. McDonnell ..	,,	253	7	F. D. Anderson	,,	204
47	W. M. Bayles ..	,,	252	3	G. H. Answorth	,,	202
23	Herbert Bros. ..	,,	250	18	R. E. Palmer ..	,,	201
44	F. W. McPherson	,,	250	51	G. Ochiltree ..	,,	199
6	Miss A. McPherson	,,	247	27	A. C. Nichols ..	,,	196
56	H. McKenzie and Son	,,	243	5	Miss A. McPherson	,,	190
14	B. Brown ..	,,	242	57	Miss G. Morgan	,,	188
37	Chas. I. Corbould	,,	242	36	Wallace Clark ..	,,	185
21	A. J. Watts ..	,,	241	45	Bambra P.F. ..	,,	185
26	L. Faulkner ..	,,	239	38	C. I. Corbould ..	,,	181
28	A. C. Nichols ..	,,	239	41	Fulham Park ..	,,	181
8	F. B. Anderson	,,	236	12	John Christie ..	,,	179
24	Herbert Bros. ..	,,	236	31	C. Fretwell ..	,,	177
19	E. S. Jeffrey ..	,,	234	32	C. Fretwell ..	,,	170
25	L. Faulkner ..	,,	234	46	Bambra P.F. ..	,,	159
58	Miss G. Morgan	,,	234	35	Wallace Clark ..	,,	151
	Class 2.—Leghorns, Dry Mash.						
59	Jack Ryan ..	White Leghorns	303	75	W. D. Alexander	White Leghorns	220
66	J. N. Baker ..	,,	282	69	Gedye Bros. ..	,,	217
83	G. McDonnell ..	,,	276	64	T. A. Pettigrove	,,	213
84	G. McDonnell ..	,,	270	73	L. McLean ..	,,	212
76	W. D. Alexander	,,	260	65	J. N. Baker ..	,,	192
74	L. McLean ..	,,	257	70	Gedye Bros. ..	,,	188
79	W. H. Thomas ..	,,	252	60	Jack Ryan ..	,, (*d*)	186
67	W. M. Bayles ..	,,	250	78	John A. Carter	,,	167
72	G. F. Walbran	,,	249	62	E. A. Lawson ..	,,	158
80	W. H. Thomas ..	,,	240	71	G. F. Walbran	,, (*d*)	123
77	John A. Carter	,,	237	81	Mrs. J. Roberts	,,	60
68	W. M. Bayles ..	,,	230	61	E. A. Lawson ..	,, (*d*)	38
82	Mrs. J. Roberts	,,	226	63	T. A. Pettigrove	,,	29

NOTE.—Death of birds marked thus (*d*).

FINAL SCORES—*continued.*

SECTION B.—INDIVIDUAL BIRDS—*continued.*

Pen No.	Competitor.	Breed.	Total to 31st March, 1920.	Pen No.	Competitor.	Breed.	Total to 31st March, 1920.

Class 3.—Light Breeds other than Leghorns, Wet Mash.

89	Mentuna P.F. ..	Ancona	215	86	Mrs. G. R. Bald	Ancona	171
85	Mrs. G. R. Bald	,,	203	87	Ronald Hardy	,,	166
90	Mentuna P.F. ..	,,	203	88	Ronald Hardy	,,	80

Class 4.—Orpingtons Any Colour, Wet Mash.

101	R. R. Christie ..	Black Orpingtons	274	98	Mrs. E. A. Long	Black Orpingtons	211
110	Martini P.F. ..	,,	254	118	H. I. Merrick ..	,,	210
127	Red Mill P.F. ..	,,	254	129	East Kew P.F.	,,	208
114	Wanchai P.F. ..	,,	247	108	J. W. Leyden ..	,,	204
105	Morgan and Watson	,,	246	128	Red Mill P.F. ..	,,	203
				126	A. Bennett ..	,,	201
111	E. A. Lawson ..	,,	243	116	A. F. Fox ..	,,	200
112	E. A. Lawson ..	,,	243	104	T. H. Wakefield	,,	198
121	W. G. Gist ..	,,	242	124	Chanticleer P.F.	,,	196
120	Bambra P.F. ..	,,	240	100	W. Hagley ..	,,	195
96	Gedye Bros. ..	,,	238	103	T. H. Wakefield	,,	195
107	J. W. Leyden ..	,,	238	93	J. H. Nichols ..	,, (*d*)	188
97	Mrs. E. A. Long	,,	235	122	W. G. Gist ..	,,	179
109	Martini P.F. ..	,,	232	92	Percy Walker ..	,,	174
106	Morgan and Watson	,,	228	117	H. I. Merrick ..	,,	169
				119	Bambra P.F. ..	,,	152
91	Percy Walker ..	,,	223	102	R. R. Christie ..	,,	147
123	Chanticleer P.F.	,,	221	125	A. Bennett ..	,,	145
113	Wanchai P.F. ..	,,	216	99	W. Hagley ..	,,	115
115	A. F. Fox ..	,,	216	94	J. H. Nichols ..	,,	106
95	Gedye Bros. ..	,,	214	130	East Kew P.F.	,, (*d*)	28

Class 5.—Heavy Breeds other than Orpingtons, Wet Mash.

136	G. H. O'Bree ..	R.I.R.	287	143	F. R. De Garis ..	L.	195
149	A. Bennett ..	,,	259	138	Miss H. Koch ..	R.I.R.	194
142	M. Whitley ..	,,	251	132	J. W. Richards	,,	190
137	Miss H. Koch ..	,,	245	134	F. H. Thiel ..	,,	187
150	A. Bennett ..	,,	235	148	Jas. Ryan ..	,,	178
147	Jas. Ryan ..	,,	226	145	A. Angus ..	,,	174
141	M. Whitley ..	,,	225	133	F. H. Thiel ..	,,	165
139	Mrs. G. R. Bald	W.P.R.	219	144	F. R. De Garis ..	L.	165
131	J. W. Richards	R.I.R.	217	146	A. Angus ..	R.I.R.	154
135	G. H. O'Bree ..	,,	210	140	Mrs. G. R. Bald	W.P.R.	137

NOTE.—Death of birds marked thus (*d*).

WEIGHT OF EGGS.

Pen No.	Name.	Number of Eggs.	Weight of Eggs.	Average Weight of Egg.	Average Weight per Dozen.
			oz.	oz.	oz.
	Class 1.—Light Breeds, Wet Mash.				
1	Montuna, P. F.	1,377	2,716	1·972	23·664
2	Murphy Bros.	1,323	2,596	1·962	23·544
3	(Vacant).				
4	(Disqualified).				
5	Kidd, Miss M. T.	1,338	2,656¾	1·985	23·820
6	White, Geo.	1,384	2,777½	2·006	24·072
7	Nicoll, J. B.	1,265	2,547½	2·013	24·156
8	Bond, H. W.	1,201	2,374	1·976	23·712
9	Mason, H. T.	1,303	2,793½	2·143	25·716
10	Miller, H.	1,294	2,566½	1·983	23·796
11	Butler, John	1,145	2,311	2·018	24·216
12	Hall, D.	1,170	2,401	2·052	24·624
13	Pocknall, G.	1,285	2,440	1·898	22·776
14	Gedye Bros.	1,033	2,066½	2	24
15	Wharton, J.	1,418	2,629½	1·854	22·248
16	Barrett, C. R.	1,118	2,227	1·991	23·892
17	Herbert Bros.	1,048	2,189	2·088	25·056
18	Ogilvie, J.	1,186	2,157	1·818	21·816
19	Champion, P. F.	1,032	2,307¼	2·235	26·820
20	McDonnell, G.	1,372	2,810	2·048	24·576
21	Underwood, E. A.	1,183	2,345½	1·982	23·784
22	Viney, Mrs. C. G.	1,268	2,611	2·059	24·708
23	Tilley, P. N.	1,575	3,158	2·005	24·06
24	Canning, Alf.	1,360	2,726	2·004	24·048
25	Schmutter, H.	1,194	2,623½	2·197	26·364
26	Mitchell, W. K.	1,307	2,575½	1·97	23·64
27	Bayles, W. M.	1,349	2,729	2·023	24·276
28	McDonnell, E.	1,166	2,379	2·04	24·48
29	Godden, W.	1,187	2,281	1·921	23·052
30	Exelby, R. E.	1,107	2,281	2·06	24·72
31	(Disqualified).				
32	(Disqualified).				
33	Black, J.	1,073	2,168½	2·02	24·24
34	Hall, Mrs. J.	1,157	2,310¾	1·996	23·952
35	Deep Spring Poultry Farm	1,284	2,544½	1·981	23·762
36	Harvey, A. A.	1,294	2,585½	1·998	23·976
37	Carter, J. A.	1,221	2,416½	1·979	23·748
38	Ridley, C.	1,421	2,801½	1·971	23·652
39	Meyers, N.	1,290	2,501½	1·936	23·232
40	Gibson, D.	1,185	2,475½	2·089	25·068
41	Stevenson, Mrs. H.	1,153	2,303	1·997	23·964
42	Hanbury, H.	901	1,783	1·978	23·736
43	Gaskell, F.	970	2,056½	2·12	25·44
44	(Disqualified).				
45	Young, Thos.	1,245	2,633	2·114	25·368
46	Watts, A. J.	1,296	2,607½	2·011	24·132
	Class 2.—Light Breeds, Dry Mash.				
47	Underwood, E. A.	1,291	2,544	1·970	23·64
48	White, Geo.	1,456	3,015	2·07	24·84
49	Ogilvie, J.	1,204	2,412½	2·003	24·036
50	McDonnell, E.	1,175	2,393½	2·037	24·444
51	Leyden, J. W.	1,301	2,753	2·116	25·392
52	Carter, J. A.	1,036	1,993½	1·924	23·088

WEIGHT OF EGGS—*continued.*

Pen No.	Name.	Number of Eggs.	Weight of Eggs.	Average Weight of Egg.	Average Weight per Dozen.
			oz.	oz.	oz.
	CLASS 2.—LIGHT BREEDS, DRY MASH—*continued.*				
53	Dunn, W. H.	1,205	2,123	1·761	21·132
54	Chung, A.	1,364	2,706	1·983	23·796
55	Wharton, J.	1,289	2,602½	2·019	24·228
56	Tilley, P. N.	1,184	2,439	2·06	24·72
57	Meyers, N.	1,192	2,401	2·014	24·168
58	Tabuteau, J. O.	1,192	2,349½	1·971	23·652
59	Maitland, P. F.	1,156	2,334½	2·094	25·128
60	Kelly and Amess	1,350	2,694	1·988	23·856
61	Fulham Park	1,268	2,525½	1·991	23·892
62	Enticknap, A.	1,573	3,129½	1·989	23·868
63	Fox, E.	1,017	2,041½	2·007	24·084
64	Ridley, C.	1,376	2,769	2·012	24·144
65	Gedye Bros.	1,271	2,522½	1·984	23·808
66	(Vacant).				
67	Robbins, W. H.	1,388	2,590	1·866	22·392
68	Bayles, W. M.	1,234	2,464½	1·592	19·004
69	McDonnell, G.	1,120	2,227	1·988	23·856
70	Bunge, H.	1,234	2,477½	2·007	24·084
	Class 3.—Heavy Breeds, Wet Mash.				
71	Mickelburough, J. C.	1,255	2,585	2·059	24·708
72	McLean, A. D.	1,285	2,663½	2·072	24·864
73	(Disqualified).				
74	Bennett, A.	1,134	2,299½	2·027	24·324
75	Hall's Egg Farm	1,031	2,182	2·116	25·392
76	Pearson, E.	1,191	2,320	1·947	23·364
77	Fisher, D.	1,222	2,321½	1·899	22·788
78	Christie, R. R.	1,038	2,105	2·027	24·324
79	Marville, P. F.	1,296	2,593	2·0007	24·008
80	Ampere, P. F.	947	1,898	2·004	24·048
81	Andrew, S.	1,553	3,100½	1·99	22·88
82	Clamp, F. G.	1,340	2,809	2·096	25·152
83	Fredricksen, F. C. S.	1,133	2,241¾	1·978	23·736
84	Hagley, W.	1,078	2,179½	2·021	24·252
85	Graham, C. E.	1,420	2,876	2·025	24·3
86	Geydo Bros.	1,154	2,490	2·157	25·884
87	Evans, F. R. N.	1,225	2,475½	2·02	24·24
88	Griffiths, Mrs. E.	1,267	2,529	1·996	23·952
89	(Disqualified).				
	Class 4.—Heavy Breeds, Dry Mash.				
90	Kelly and Amess	922	1,854	2·011	24·132
91	McLean, A. D.	1,149	2,096¼	1·824	21·888
92	Bennett, A.	1,058	2,295½	2·169	26·028
93	Watts, C. F.	1,325	2,664	2·01	24·12
94	Leyden, J. W.	1,458	2,982½	2·045	24·54
95	Christie, R. R.	1,263	2,513	1·989	23·868
96	Mickelburough, J. C.	1,199	2,363	1·97	23·64
97	Fisher, D.	1,112	2,487½	2·236	26·832
98	Marville, P. F.	994	1,949	1·95	23·40
99	Eastaugh, T. L.	1,155	2,164	1·873	22·476
100	Gedye Bros.	1,325	2,518	1·9	22·8

PRIZE LIST.

For the greatest total number of eggs laid by a pen in each Class of Sections "A" and "B":—

Section A.—Groups of Six Birds.

Class 1.—Light Breeds.—Wet Mash—

1st Prize, Champion Certificate: P. N. Tilley, 3 Campbell-road, Balwyn.
2nd Prize, Government Certificate: C. Ridley, Auburn-avenue, Northcote.
3rd Prize, Government Certificate: J. Wharton, Swansea-road, Chelsea.

Class 2.—Light Breeds.—Dry Mash—

1st Prize, Champion Certificate: A. Enticknap, 216 High-street, Prahran.
2nd Prize, Government Certificate: G. White, Wattle Park P.F., Traralgon.
3rd Prize, Government Certificate: W. H. Robbins, 180 Riversdale-road, Glenferrie.

Class 3.—Heavy Breeds.—Wet Mash—

1st Prize, Champion Certificate: S. Andrew, 10 Lysterville-avenue, Malvern.
2nd Prize, Government Certificate: C. E. Graham, "All Black" P.F., Portarlington.
3rd Prize, Government Certificate: F. G. Clamp, "Mont View," Macedon.

Class 4.—Heavy Breeds.—Dry Mash—

1st Prize, Champion Certificate: J. W. Leydon, Sunbury.
2nd Prize, Government Certificate: *Gedye Bros., Railway-road, Blackburn.
*C. F. Watts, 295 Malvern-road, East Malvern.

Section B.—Individual Birds.

Class 1.—Leghorns.—Wet Mash—

1st Prize, Champion Certificate: Kelvin P.F. (W. McDougall), Castlemaine.
2nd Prize, Government Certificate: *Alf. Canning, 1 McLean-street, W. Brunswick.
*E. S. Jeffrey, 334 Clark-street, Northcote.

Class 2.—Leghorns.—Dry Mash—

1st Prize, Champion Certificate: Jack Ryan, Silvan, *viâ* Evelyn.
2nd Prize, Government Certificate: J. N. Baker, Somerville.
3rd Prize, Government Certificate: G. McDonnell, 150 Camberwell-road, Auburn.

Class 3.—All Light Breeds other than Leghorns.—Wet Mash—

1st Prize, Champion Certificate: Montuna P.F. (A. K. and H. S. Luke), Beaconsfield.
2nd Prize, Government Certificate: *Mrs. G. R. Bald, Sefton-place, East Camberwell.
*Montuna P.F. (A. K. and H. S. Luke), Beaconsfield.

Class 4.—Orpingtons, any colour.—Wet Mash—

1st Prize, Champion Certificate: R. R. Christie, St. Elms P.F., Bentleigh.
2nd Prize, Government Certificate: *Martini P.F. (T. Kirk), 18 Toward-street, Murrumbeena.
*Red Mill P.F. (A. W. Smith), Cheltenham.

Class 5.—All Heavy Breeds other than Orpingtons.—Wet Mash—

1st Prize, Champion Certificate: G. H. O'Bree, cr. Duke and Walpole streets, Kew.
2nd Prize, Government Certificate: A. Bennett, "Tare," Willow-grove, East Camberwell.
3rd Prize, Government Certificate: M. Whitley, Lingwell-road, Auburn.

* Equal.

For the greatest total number of eggs laid by individual birds in each Class of Section "A."

Class 1.—Light Breeds—Wet Mash.

1st Prize, Champion Certificate: P. N. Tilley, 3 Campbell-street, Balwyn.
2nd Prize, Government Certificate: Miss M. T. Kidd, The Wattles, Barker's Creek.
3rd Prize, Government Certificate: H. Hanbury, "Eileen," High-street, Prahran.

Class 2.—Light Breeds.—Dry Mash.

1st Prize, Champion Certificate: J. W. Leydon, Sunbury.
2nd Prize, Government Certificate: A. Entwicknap, 216 High-street, Prahran.
3rd Prize, Government Certificate: G. White, Wattle Park P. F., Traralgon.

Class 3.—Heavy Breeds.—Wet Mash.

1st Prize, Champion Certificate: C. E. Graham, "All Black" P. F., Portarlington.
2nd Prize, Government Certificate: S. Andrew, 10 Lysterville-avenue, Malvern.
3rd Prize, Government Certificate: S. Andrew, 10 Lysterville-avenue, Malvern.

Class 4.—Heavy Breeds.—Dry Mash.

1st Prize, Champion Certificate: R. R. Christie, St. Elms P. F., Bentleigh.
2nd Prize, Government Certificate: C. F. Watts, 295 Malvern-road, E. Malvern.
3rd Prize, Government Certificate: Gedye Bros., Railway-road, Blackburn.

For the pen which shows the greatest average weight per dozen eggs laid:—

Section A.—Groups of Six Birds.

1st Prize, Government Certificate: H. Schmutter, 26·924 ozs. per dozen.

For the pen the eggs of which realized the highest market value throughout the competition:—

Section A.—Groups of Six Birds.

1st Prize, Government Certificate: P. N. Tilley (pen 23), 1,575 eggs; value, £9 15s. 10d.

SMALL FRUIT CULTURE IN VICTORIA.

A. A. Hammond, Orchard Supervisor.

The small fruits dealt with in this article are known in England and the United States of America as bush fruits. These include the brambles (raspberry, blackberry, and hybrids) and the groselles (gooseberry and currants). The cultural methods and the climatic and soil requirements of other small fruits cultivated in Victoria have nothing in common with the bush fruits; therefore it was thought out of place to include them in this article.

Bush fruits can be grown, with proper care and attention, in a wide range of soil and climate; but, if grown commercially on a large scale, particular attention must be given to climatic and soil conditions. Although the requirements of these fruits are very similar, there is a considerable variation in the different species, and even in varieties of the same species, in respect to hardiness, susceptibility to injury by frosts, and in other ways. These variations will be considered when dealing with the different fruits in detail.

Most bush fruits thrive best in the cool mountainous and hilly districts of the State. Here the rainfall is usually good, and, providing the soil is of the right character, the plants grow luxuriantly and are fruitful. Although the brambles are not fastidious in their soil requirements, they prefer a rich, deep, and rather heavy moist loam. They will not thrive on waterlogged land, but a sufficiency of moisture is essential, otherwise plants will be stunted and unfruitful.

During the past few years there has been a considerable increase in the production of blackberries and the so-called hybrid loganberry, particularly the latter, but there has been no appreciable increase in the yield of other small fruits.

In the season 1909-10, according to the *Victorian Year-Book,* 325 bushels of blackberries were produced in commercial orchards, and a gradual increase in the production of this berry has been recorded till the season 1917-18, when the yield for the State reached 1,078 bushels. No record has been kept of the quantity of loganberries grown, but there has been an undoubted increase. Although the plantations are small—the largest known to the writer being 3½ acres—the popularity and adaptability of this berry to several commercial uses is certain to lead to an expansion in the loganberry area during the next few years.

The Loganberry.

The loganberry was formerly thought to be a hybrid, *i.e.,* a cross between two species of the genus *Rubus,* but recent investigations appear to have proved that it is a variety of the dewberry—a trailing form of the blackberry.

In 1881, Judge Logan, of Santa Cruz, California, raised the loganberry from seeds of a dewberry called the auginbaugh. As this plant was growing in juxtaposition to that of an Antwerp red raspberry, and as the fruit of the seedling appeared to have the characteristics of both these plants, he concluded that it was a hybrid.

Now, however, there seems to be little doubt, as recorded in *Bulletin* 998, U.S.A., Department of Agriculture, that the loganberry is a variety of the dewberry, which grows wild on the Pacific Coast.

EXTENT OF ITS CULTURE.

The loganberry has been cultivated in the southern districts of Victoria, particularly those within carting distance of the metropolitan markets.

The climatic conditions south of the Dividing Range are, speaking generally, suited to its cultivation; but, as the loganberry is susceptible to injury from frost, is liable to sun scald, and is injuriously affected by strong winds, there are localities where it could not be successfully

A Good Crop of Loganberries.

grown. The climatic condition of the mountainous and hilly districts of the eastern and north-eastern portions of the State should also be adapted to its cultivation. With an adequate supply of water it could doubtless also be profitably grown in the dry, warm northern districts of the State.

SITE.

In choosing the locality for a plantation, contiguity of markets is of considerable importance. Growers within carting distance of the

metropolis or other populous centres are placed at a great advantage, for not only can they market the fruit more cheaply, but they can place it on the market in the best possible condition.

The ideal site for a plantation is one where the soil is a deep, moist, well-drained, rather heavy loam, and is naturally sheltered from strong winds. Many successful plantations are situated in rather low-lying land, which is naturally sheltered, but care must be taken to avoid gullies, where the air drainage is bad, and which, consequently, are subject to heavy frosts.

The loganberry is a comparatively early bloomer, coming into bloom from 20 to 30 days before kindred berries; therefore, the crop may sometimes be destroyed by a late frost, when the lawtonberry, for instance, escapes injury.

DRAINAGE.

Even in fairly well-drained land it pays to underdrain, but where the natural drainage is bad underdrainage is essential. Two-inch tile drains, from 20 to 30 feet apart, and from 2 ft. 6 in. to 3 feet deep, are recommended. In shallow soils with a heavy retentive clay subsoil the drains should not be more than 20 feet apart, nor more than 2 ft. 6 in. deep. In deep fairly porous soils the drains may be placed farther apart, and should be 3 feet deep. In some cases drainage of the wettest portions may be sufficient. When timber is available and cheap, a well-made wooden drain is effective, and will last as long as the plantation. In making a drain it is important that the clay taken out last should be returned first and firmly trodden down. Water should enter the drains from the bottom, not from the top as is often thought. The practice of placing brush or other rubbish immediately on top of the drain and filling in loosely, so that the water may enter from the top, is altogether wrong, and drains so constructed will soon silt up and become choked. The importance of good drainage cannot well be overestimated.

Briefly, it may be said that effective underdrainage increases the root pasturage by inducing plants to root more deeply. Well-drained land is warmer and drier in the winter, and cooler and moister in the summer, than undrained land. Underdrainage aerates and enriches the soil by increasing bacterial activity, upon which depends the liberation of essential plant foods.

PROTECTION FROM WINDS.

If there is no natural shelter, a breakwind of *Pinus insignus* or other suitable trees should be provided. Loganberries are injured by strong winds, and, although care in tying up minimizes the damage, they thrive better when sheltered.

Hot winds also do much damage by scalding the ripe berries. Fortunately, however, only a small percentage of the crop is ripe at any one time, and, as the ripe berries only are injured, the loss is not great unless these winds recur frequently during the ripening season. Where there are strong prevailing winds, it is advisable to plant the rows parallel to the direction of the wind.

PREPARATION OF THE LAND.

If it is intended to plant in autumn or early winter the land should be deeply ploughed in spring and lie in a rough condition during

summer. This has the effect of sweetening the soil and making it more friable. It is advisable to plough as deeply as possible, provided that the subsoil is not brought to the surface. If the soil should be shallow and hardpan exists, it must be broken either by a subsoil plough or by a plough with the mouldboard removed following in the furrow of the first plough. If planting does not take place before spring, the preparation of the land can be delayed till autumn. The land should not be ploughed when wet; heavy land ploughed in a wet condition is seriously injured. A dressing of at least 1 ton of lime to the acre should be given in the autumn to land which is likely to be sour. Air-slaked lime is best for correcting acidity. Extra care in the preparation of land is well repaid by vigorous and fruitful plants.

Loganberries and Lawtonberries.
(The spray to the left is Mammoth Black Loganberry and to the right Lawtonberry.)

PROPAGATION.

The loganberry, as with all dewberries, propagates naturally from the tips. The tips of the canes should be covered with a few inches of soil at the end of the growing season—that is, about the beginning of May. In loose mellow soil the tips will take root readily without covering. If it is desired to produce many plants, the whole cane may be covered, when it will make roots at every node. The rooted portions

can then be removed to form plants. Another method is to pinch the strongly-growing canes about mid-summer. This will cause laterals to be produced at every node, and the tops of these will root readily. The plants obtained by the latter method are equally as strong and fruitful as those obtained from the tips of a single cane, but the cane itself which has produced these plants is not so fruitful in the season following. The loganberry can also be propagated by root cuttings and also by seed. Plants produced from seed, however, do not come true, and the fruit is invariably inferior to that of the parent plant. The single-cane plants are, on the whole, the best method of propagation, and, seeing that about 5,000 can be produced on an acre plantation, the other methods should rarely be necessary.

Mr. Murfet's Loganberry Plantation at Ringwood.

Planting.

In cool moist districts spring planting is recommended, but the plants should be set not later than mid-September. In the drier and warmer districts the plants may be set as soon as the tip plants can be obtained. This would probably be in early June. In the case of spring planting, the plants should be well established before the warm weather sets in.

The loganberry is usually planted 6 feet x 6 feet on the square system. Where the soil is rich and the growth likely to be vigorous, it is advisable to plant from 6 to 8 feet apart in rows 8 feet apart. This allows plenty of room for cultivation, which is desirable in the case of strong-growing plants.

When planting is done in spring, care must be taken to prevent the roots of the young plants drying out. They should be heeled in or covered with earth immediately they are received, and when taken out for planting should be protected from sun and wind by a wet bag. This is particularly necessary if the weather is at all warm.

The soil, having previously been worked to a fine tilth, the planting can be quickly done with a spade. The spade is thrust in close to the line on the farther side from the operator but pushed forward, the plant placed in position, which should be about 3 inches deeper than it previously stood, the spade withdrawn, and the earth firmed around the plant with the feet. When a large number of plants is being set, it is best to open out a furrow with the plough to the required depth. The plant is set in this, the fine soil placed around the roots and firmed, and the furrow filled by ploughing "on." A rod of the necessary length gives the distance between plants. As mentioned before, in districts where there are strong prevailing winds, it is best to have the rows running parallel with the direction of the wind.

IRRIGATION.

The loganberry delights in a rich moist soil, and, where moisture is deficient in the summer, it must be supplied. The yields of plantations near the metropolis have been increased 25 to 50 per cent. by irrigation, and all commercial growers in this district now irrigate. In the deep loams of Wandin district and those of a similar character, where the rainfall is good and the climatic conditions particularly favorable, irrigation is not so necessary, but even there, in some seasons, the plants are greatly benefited by irrigation.

The number of waterings depends largely on the season. It is important that the soil be kept moist during the time the fruit is maturing. Applications of water from every seven to fourteen days are necessary during a dry spell, according to the quantity of water used at each application and the nature of the soil. It is very necessary to cultivate the land as soon as practicable after each watering.

CULTIVATION.

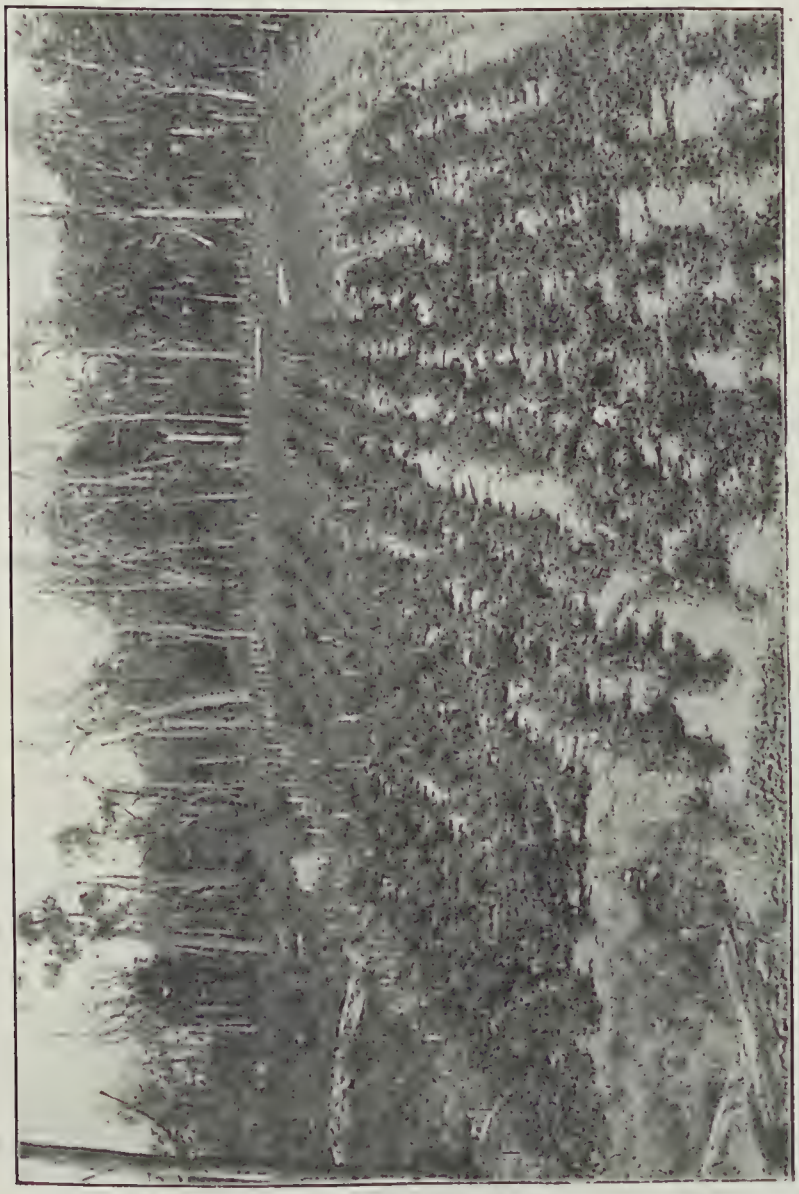
For the purpose of conserving moisture, destroying weeds, and assisting in the liberation of essential plant food, tillage is, perhaps, more necessary in the case of the loganberry than with the larger fruits. The loganberry will not thrive nor be fruitful unless there is an ample supply of moisture in the soil. In the dry and warm districts of Victoria, irrigation and thorough cultivation are essential.

The implements required for cultivation depend to some extent on the nature of the soil. A single-furrow orchard plough with shifting handles is necessary to enable ploughing to be done close up to the plants.

The deeper the ploughing, in reason, the better, providing that the subsoil is not brought to the surface nor the roots of the plants injured. The deeper the soil mulch the better for conservation of moisture. The usual depth is from 5 to 6 inches, with a few furrows near the plants shallower if there is danger of injuring roots. If the plantation is ploughed deeply from the beginning, and worked regularly at that depth, there is little danger of doing damage to the roots.

Ploughing is necessary at least twice a year. In the autumn or early winter the land should be ploughed "on"—that is, the soil should be turned towards the plants, leaving a deep furrow midway between the rows. The land should lie in a rough condition during winter, and

as much of the surface as possible exposed to the ameliorating influence of sun, air, and frost. In spring, the ploughing should be "off," or away from, the plants. The centre furrow is filled by this ploughing



A General View of Mr. Harold Godwin's Berry Plantation at Wandin.

and the land left level. It is usually necessary to harrow before the spring ploughing in order to put the land in proper condition for this operation.

As mentioned before, heavy land should not be worked when too wet. For this reason the autumn ploughing should not be delayed too long nor the spring ploughing done too early.

The summer cultivation consists of harrowing and working with the spring-tooth cultivator or one-way disc. Before the trellises are erected in the first year of planting, cross working can be practised if desired. Later, when the canes grow long and spread in every direction, cultivation may be done only in one direction between the rows.

The canes, as they grow, must be trained along the ground in line with the rows so as to be out of the way of the cultivator. The different systems of training the canes and trellising will be dealt with later.

The frequency of summer cultivation is dependent, chiefly, on the season. Cultivation is necessary after heavy rain or irrigation to provide an earth mulch to prevent evaporation and the growth of grass and weeds.

More frequent waterings will not compensate for neglect in cultivation. Inexperienced growers sometimes fall into this error.

Regarding the necessity for destroying grass, &c., by cultivation, recent experiments conducted at the Woburn Experimental Fruit Farm disclosed the fact that grass, &c., not only robs the soil of moisture, but does much more harm by producing a toxin which is very harmful to the cultivated plants. The aeration of the soil by cultivation oxidizes the toxin and renders it harmless. More than this, what was previously a toxin becomes on oxidization a plant food. It was also found that on land well underdrained the toxin was mostly washed out of the soil, and consequently its injurious effects considerably lessened.

The chemical condition of a soil being dependent on its physical condition, it follows that thorough cultivation is of vital importance.

(To be continued.)

THE CARE OF HONEY WHEN STORED.

If honey is stored in a damp place, and not thoroughly sealed up, it will absorb moisture, and if excessive moisture is so taken up the honey is liable to ferment and deteriorate in value. Do not leave the lid off the containers, or leave honey exposed for any length of time during the late autumn and winter months. If kept in a dry place in a sound container honey will keep good for years; it may granulate, but that is not a sign of deterioration, and in such case it may easily be liquefied by immersion of the container in hot water. Honey containing excessive moisture, in contact with the atmosphere and in a tinned container, will often be stained, as the liquid then has a tendency to absorb some of the tin—an event usually indicated by a dark streak. Let the apiarist have his honey well ripened naturally by the bees and stored in a sound container in a dry place, and he will experience no trouble.—W. A. GOODACRE, Senior Apiary Inspector, in the *Agricultural Gazette* of New South Wales, June, 1920.

AGRICULTURAL DISPLAY AT THE SPECIAL SHOW

TO CELEBRATE THE VISIT OF H.R.H. THE PRINCE OF WALES.

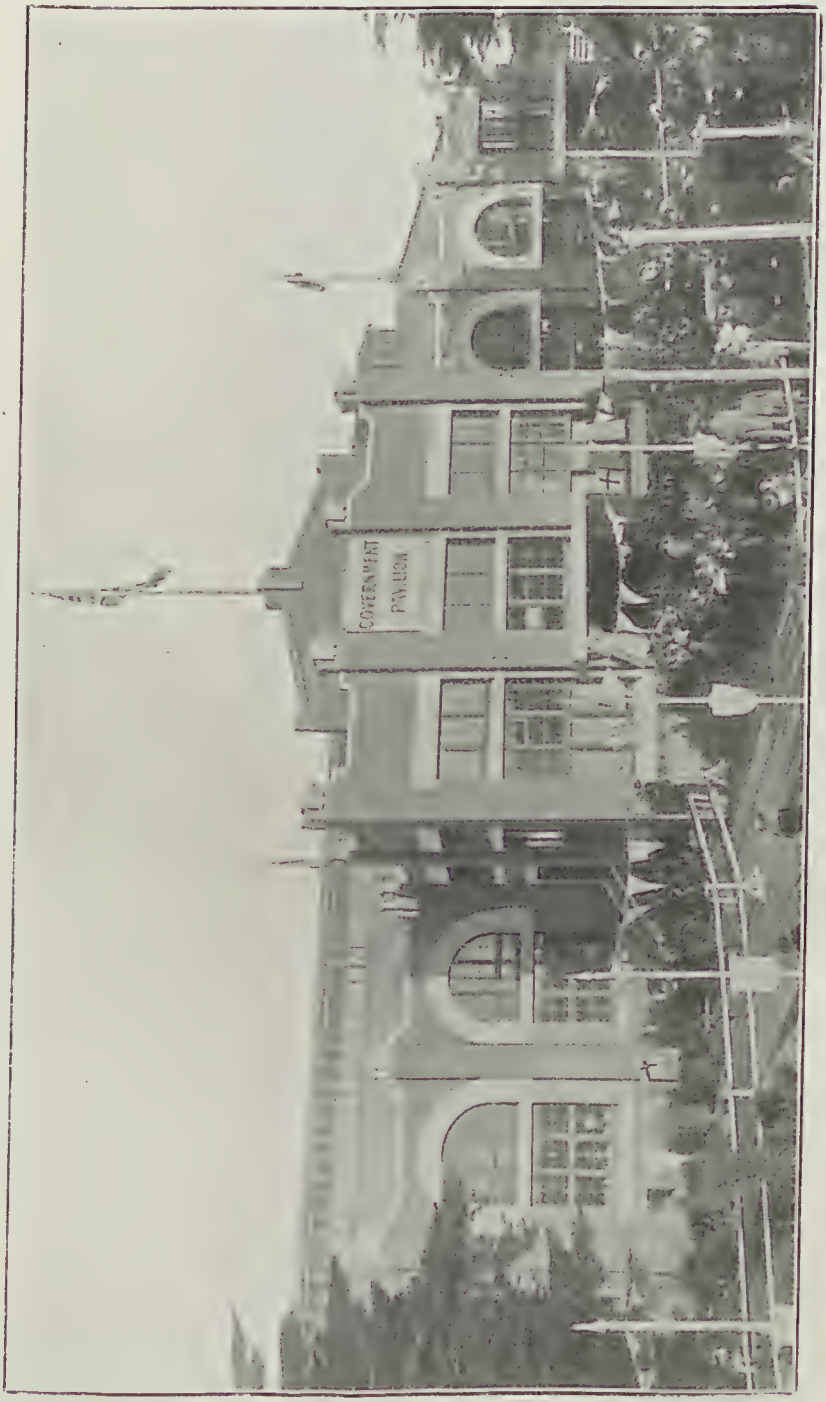
On the occasion of the visit of His Royal Highness The Prince of Wales to Australia, the Royal Agricultural Society of Victoria arranged a Show on the 29th May, so that the Prince might have an opportunity to see some of the best of the various classes of live stock and samples of the chief primary products of the State.

The Department of Agriculture was intrusted with the making of a display of products of the soil in the Government Pavilion. Samples of nearly all the Australian primary products, the total production of which represent an annual value of £188,500,000—including £48,000,000 for Victora—were shown. The Department was materially assisted by the State Wool Committee, which staged some of the finest greasy and scoured wool of all classes produced in the world. It is perhaps worth mentioning here that the number of sheep in Australia totals 84,965,000, and of these about 16,000,000 belong to Victoria. The wool produced last year was 2,025,456 bales, including 600,968 for Victoria; valued at £45,515,675 and £13,313,839 respectively. The Bacchus Marsh Agricultural Society displayed a collection of products, showing the large variety of commodities which can be produced in one district of the State. The Western and Murray Districts Co-operative Bacon Curing Company Ltd. made a most creditable contribution of bacon and pig products. Pig raising is undoubtedly a promising and profitable industry, especially when carried on with dairying or mixed farming, and should be capable of great development. The Australian Dried Fruits Association placed on view an excellent collection of dried fruits, the "Sunraysed" exhibit comprising sultanas, currants, apricots, peaches, and other kinds of dried fruits and products. Messrs. Bennet and Woolcock, wholesale and retail butchers, contributed the meat shown in the glass freezing chamber, giving the public some idea of the state in which 4,000,000 carcasses of mutton and lamb exported from Victoria this year were sent away. Besides mutton and lamb, the firm exhibited specimens of frozen beef, pork, and sundry meats. Messrs. Raphael and Coy and D. Hyland and Sons Pty. Ltd. supplied an exhibit of poultry—turkeys, chickens, &c. These exhibits, together with others supplied from private sources, were the best of their several kinds. They were all most tastefully displayed, and materially supplemented those of the Government Departments.

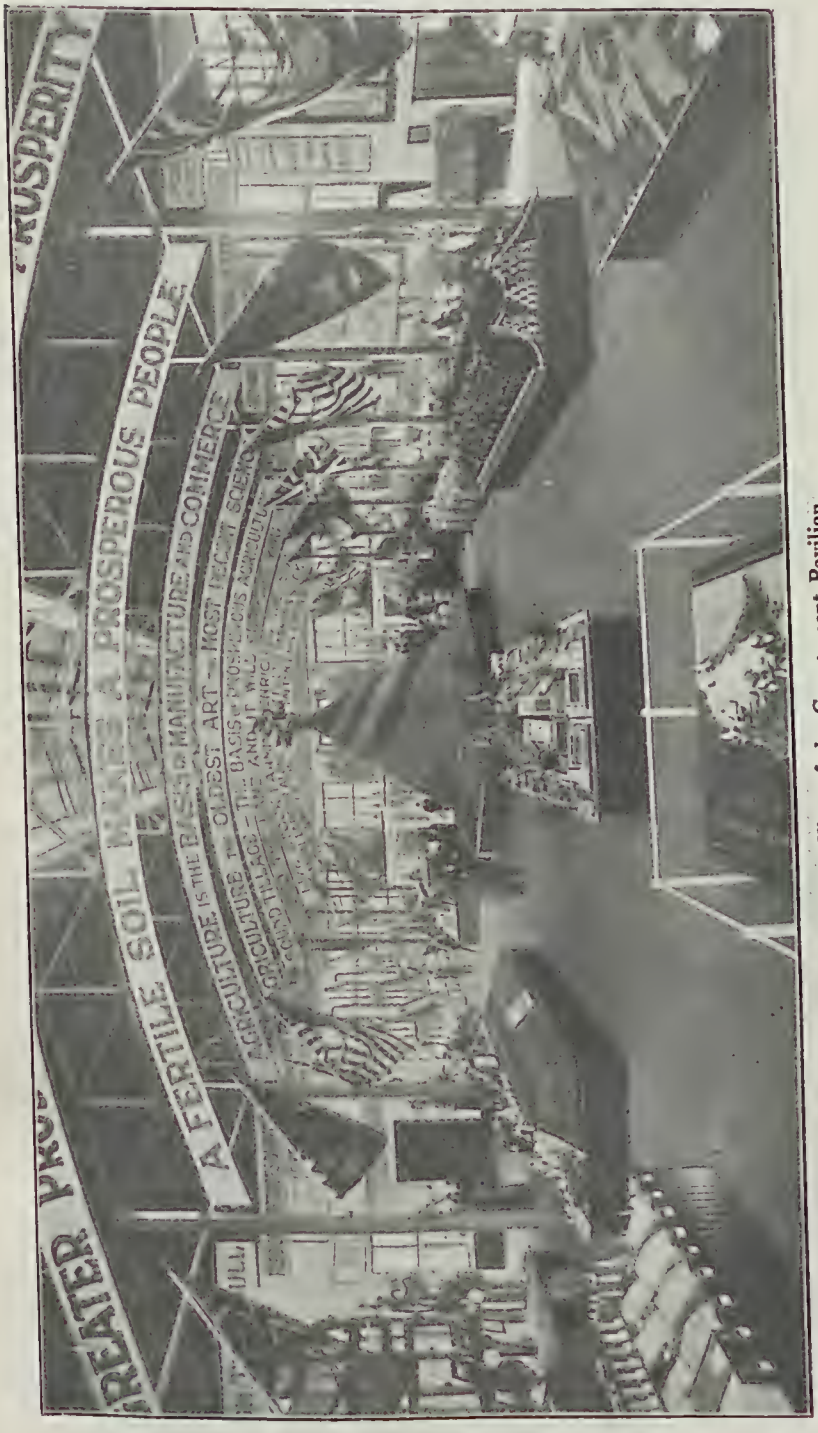
The Forestry Department arranged timbers in raw and manufactured form, showing the value and beauty of woods grown in the State, together with by-products, including extracts, &c., the latter being supplied by Cumiing, Smith, and Co. Pty. Ltd. Up till a few years ago, most of the material for building and furniture-making was imported from other countries; now, the suitability and value of local timbers are generally recognised. With proper seasoning and treatment, the native woods have proved eminently adapted for all purposes.

The Dookie and Longerenong Agricultural Colleges showed products of their respectve farms and work of the students, giving a good idea of the scope of their operations and educational work.

The Werribee Research Farm staged grain and other products of the farm, illustrating the extensive nature and value of the work carried out there.

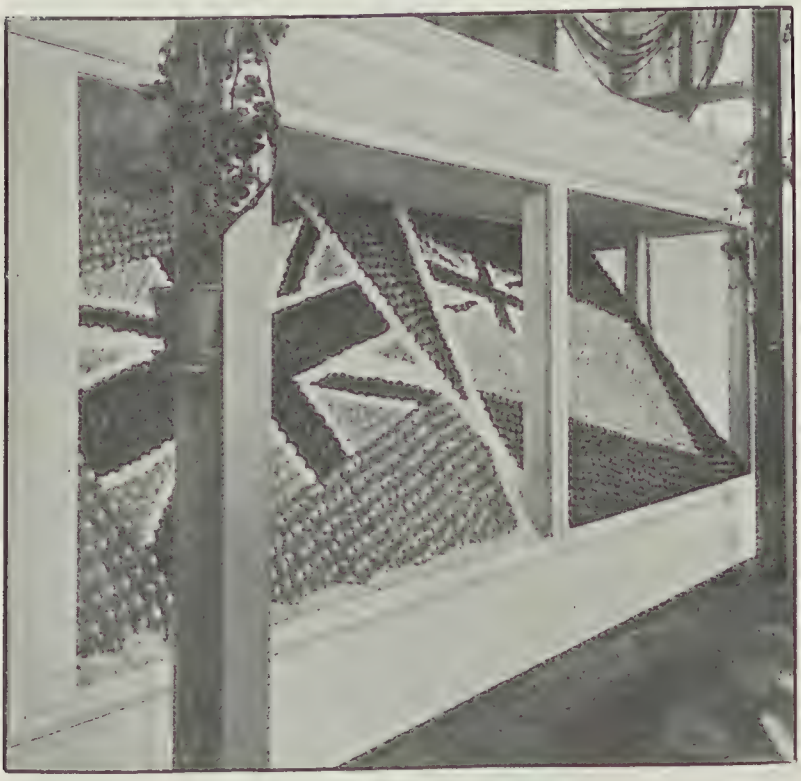


The Arrival of the Prince of Wales.


A FERTILE SOIL MEANS A PROSPEROUS PEOPLE
AGRICULTURE IS THE BASIS OF MANUFACTURE AND COMMERCE
AGRICULTURE — OLDEST ART — MOST NECESSARY

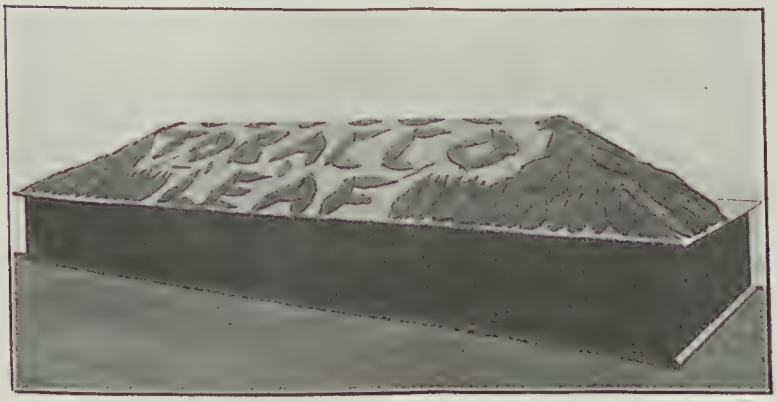
Interior View of the Government Pavilion.

Portion of Wool Exhibit Staged by State Wool Committee.



Apples in the Glass Cool Chamber.

A Pyramid of Fruit.



The Tobacco Exhibit.

Back View of the Government Pavilion.

Fruit.

Fruit occupied the central trophy in the shape of a pyramid, surmounted by a well-laden orange tree. The octagonal-shaped pyramid was furnished with eight varieties carried spirally to the summit, the whole symbolizing prolific abundance. In the glass cool chamber the fresh fruit display was supplemented and worked out in designs showing the Union Jack and the Australian flag. About 5,500,000 bushels of fruit are produced in the State of Victoria, representing nearly 37 per cent. of the fruit grown in the whole of Australia. Since the Show a cable has been received intimating that Victorian fruit has been awarded the Banksian Medal by the Royal Horticultural Society. The winning apples were shown in competition with entries from all the British Dominions, and their success indicates that Australia is capable of producing fruit equal to that of any other part of the world. All kinds of bottled fruit, jams, jellies, pickles, &c., in preserved form were also displayed, and made a most attractive exhibit.

Viticulture.

One of the most striking features in the Pavilion was the vines on all the pillars laden with different varieties of grapes. These grapes had been held in cool storage since the fruit season. In the special section of the viticultural branch three main activities of the vine industry were shown, viz., fresh grapes, dried grapes, and wine, the last named being represented by a trophy of bottles bearing the labels of leading Victorian wine merchants. When the Prince reached this part of the Pavilion, he was invited to taste a couple of choice old wines selected for the occasion by the Viticultural Society of Victoria. He very graciously consented, and commented most favorably on the quality of the wines, which were Yeringberg, White Hermitage, and a Sunbury Red Hermitage, of 1900 and 1874 vintages, respectively.

The wine shipments to Great Britain have steadily increased during the past thirty years, and prospects were never brighter than at the present time. The 40 per cent. Tariff preference recently given our wines on entry into Great Britain should greatly assist in making Australia the supplier of most of the wine required by the Mother Country, which her climate does not permit to grow herself, thus justifying the name of "John Bull's Vineyard." This was the title prophetically given to a little book by the late Hubert de Castella, describing Victorian viticulture at the time of the Royal Colonial and Indian Exhibition held in London in 1886. A copy of this work, which was dedicated to the then Prince of Wales (afterwards King Edward VII.), was presented to His Royal Highness by Mr. F. de Castella, son of the author, who remarked that his father's prediction seemed to be in a fair way towards realization.

Tobacco.

The exhibit of tobacco leaf grown and cured in Victoria evidenced the marked development as compared with the leaf shown in previous years, the most important improvement being in cigarette and bright plug tobaccos; nice quality samples of cigar leaf were also on exhibition.

There appears to be a good prospect of large quantities of good cigar filler leaf being produced in Victoria now that proof has been given of these crops' suitability to certain soils and climates of the

State. Recent improvement is due chiefly to the attention to more up-to-date varieties suited to local conditions, and better systems of treatmen . Prices for the local product have risen during the past five years from 6d. and 1s. per lb. to 3s. per lb. for leaf, and there seems every likelihood of prices rising still higher in the near future. The world's supply of raw material was barely keeping pace with the demand before the war, during which many tobacco-producing countries were greatly interfered with as suppliers.

Australia at the present time produces only 12 per cent. of the tobacco manufactured locally, and there is no reason apparent why she should not supply nearly the whole of her requirements in the near future, and establish an export trade for tobacco leaf.

Potatoes and Onions.

In the *Journal of the Board of Agriculture* in March, 1919, the following paragraph appeared, viz.:—

> "Of the crops other than cereals which exercised an important influence on the course of the war, the potato is the chief; indeed, in some ways the potato may be said to have been the most impor ant of all crops, for without it Germany could not have carried the war into the fifth year. With the single exception of sugar beet, more food can be produced per acre by the potato than by any other commonly cultivated food plants."

A photo. was displayed on the potato exhibit, showing a crop in Victoria this year which yielded 18 tons to the acre.

About 60,000 acres produce within the State from 200,000 to 240,000 tons on an average, having a gross value of £1,250,000 to £1,500,000.

Victoria is by far the greatest potato-producing State of the Commonwealth, whence all the other States, excepting Tasmania, draw large quantities.

Poultry.

A hen was shown which made the world's official record in one year by laying 335 eggs, and poultry of all kinds was displayed in the glass freezing chamber. Eggs were also shown in cool chamber, arranged to show the Prince's Feathers with white eggs on a brown egg ground, and the badge of the A.I.F. with brown eggs on a ground of white eggs. These designs were most attractive. The annual production in the State of Victoria has now reached £2,500,000 for eggs and table poultry.

Dairy Produce.

One of the leading staple industries in the State is dairying, and butter and cheese occupied a cool chamber, whilst milk products furnished a stand. Over 600,000,000 gallons of milk are produced in the Commonwealth yearly. The milk consumed and the butter, cheese, and milk products manufactured have a total value of about £20,000,000.

Included in the milk products section were dried milk, concentrated and condensed milks, casein, milk sugar, and combs, &c., produced from casein. An interesting feature was a 10-gallon can and products which that quantity of average quality milk would produce in the shape of butter, cheese, pork, or veal; dried, concentrated, or condensed milk, casein, and milk sugar, &c.

Fibres.

Flax growing may be classed as one of the minor industries, but under the stimulus of present values has recently made, and probably will continue to make, reasonable progress, for much of our soil, as well as our climate, especially near coastal districts, is eminently suitable for its production for both fibre and seed purposes.

Shown on the table allotted to this section were samples of Irish flax, each marked according to European grade and value, samples of the Victorian-grown product taken from various parts of the State, and several bundles representative of consignments recently sold in England; these are amongst the first so marketed, and it was interesting to note that the quality of the local commodity compared very favorably with the better grades of the imported, and it is encouraging to know that the prices obtained for the exported lots referred to were highly satisfactory.

To induce the cultivation of flax on a larger scale and the erection of the necessary scutch mills, the Commonwealth Government has guaranteed growers a minimum price for three years, in addition to which they are to participate in the profits derived from its manufacture and sale, which it is anticipated will add materially to the guaranteed figure.

During the past three years the area cultivated has increased from 600 to approximately 2,000 acres, and there is every reason to believe that as a result of the Government guarantee the area within the near future will be considerably added to.

Grain and Flour.

The wheat industry is one of the main sources of Victoria's agricultural wealth. During the war period Victoria has raised over 200,000,000 bushels of wheat, which was worth to the State approximately £40,000,000. The acreage under cultivation has declined somewhat during the war owing to difficulties and shortage in overseas transport. In view of the world shortage of this cereal, prices have rapidly advanced, and it seems certain that the wheat-growers will receive highly satisfactory prices for their product for the next few years. The Department of Agriculture inaugurated a wheat campaign during the past autumn with highly gratifying results. Despite the absence of early soaking rains, there has been a considerable increase in area, and it appears probable that the area under crop this year will approximate 3,000,000 acres.

The exhibits of grain comprised a collection of bulk samples of the leading varieties of wheat grown in Victoria, together with a collection of offals and flour from each variety. The milling of each variety of wheat was illustrated by the use of specimen jars filled with products of each variety.

Sugar.

A fine collection of products of the Maffra factory was exhibited. Despite many drawbacks, the Maffra Sugar Factory—the only beet-sugar factory in Australia—has made headway, and has now emerged to the profit-making stage.

Beet is one of the most profitable crops to grow, as it produces more food per acre than any other crop, and vastly improves the agriculture of any district in which it is grown. The collapse of the beet industry

in Central Europe through the war, and the shortage of cane sugar, have caused world prices for this commodity to rise considerably. The success of the beet factory at Maffra seems now assured.

General.

The Government pavilion was erected at the Royal Society's Show Grounds three years ago at a cost of £10,000, and is utilized at the annual September show by the Department of Agriculture for the exhibit of products of the State and giving information to producers, and illustrating best methods of production. No finer collection of exhibits has been put together than on the occasion of the Prince's visit; and the Prince, before leaving, congratulated the officers on the comprehensive and attractive display.

FARM NOTES FOR MAY, 1920.

STATE RESEARCH FARM, WERRIBEE.

H. C. Wilson, Manager.

The Season.

The steady timely rains through the month have completely altered the prospects of the season of this district, and after the trying times experienced during the past six months stock-owners and farmers are jubilant at the favorable turn the season has taken.

The rain recorded for the first five months of the year has been as under:—

January	125	points.
February	30	,,
March	77	,,
April	126	,,
May	222	,,
Total	580	points.

During the months of April and early May the fallows of the farm were partly seeded; this was before the heaviest autumn rain fell. 350 acres of wheat and oats mixed for hay was sown in a dry seed-bed; also 200 acres of seed wheat. Following on the 180 points of rain during the second week of May, germination of these early-sown areas has been extremely good, and very little loss by mould or malting has resulted, as was at one time feared.

Seeding.

During the month of May 60 acres of barley for grain, 100 acres of oats for hay and grain, and the bulk of the experimental seeding has been completed.

The total autumn seeding for the year to the time of writing is as follows:—

Date.	Paddocks.	Crop.	Acres.	Manure per acre.	Seed per acre.	Cultivating System.
April 1–4	Hearts paddock ..	Hay	60	120 lbs. superphosphate	{ Algerian oats, 45 lb. { Warden wheat, 45lb	Winter fallow
April 5–20	New leased land ..	Hay	210	120 ,,	U.K. 45 lb., Algerian oats, 75 lbs.	,,
April 21–25	Old leased land ..	Grain	60	120 ,,	Algerian oats 25 lbs.	,,
April 26–28	,, ,, ..	,,	50	120 ,,	Warden seed wheat, 60 lbs.	,,
April 25 } May 3 }	No. 9 N.E. ..	Green Feed	62	56 ,,	Barley (Oregon Cape), 35 lbs.	Green ploughing
April 28–30	Old leased land ..	Grain	40	120 ,,	Federation, 60 lbs...	Winter fallow
May 3–4	,, ,, ..	,,	30	120 ,,	Y. King, 60 lbs. ..	,,
May 3–10	No. 14 S.E. ..	Silage	45	120 ,,	Barley (Oregon Cape), 65 lbs.	Green ploughing
May 5–6	Old leased land ..	Grain	30	120 ,,	Gallipoli, 60 lbs. ..	Winter fallow
May 6–7	,, ,, ..	,,	30	120 ,,	Major, 60 lbs. ..	,,
May 20–24	,, ,, ..	,,	20	120 ,,	Currawa, 60 lbs. ..	,,
May 21–28	No. 10 N.E. ..	Hay	62	156 ,,	{ Algerian oats, 45 lbs. { Graham wheat, 45 lbs.	,, Rape fallow
May 28 } June 3 }	North Blue Gum..	Grain	30	120 ,,	Algerian oats, 65 lbs.	Summer fallow
May 24 } June 3 }	No. 8 N.E. ..	Stud Wheat	60	120 ,,	Wheat experimental and varieties	Early winter fallow
..	Experimental fields	Exp.	70	Varying quantities	Varying quantities..	Fallow
		Total	829	Acres		

Wheat and Oats Mixture of Hay.

It has always been our custom to provide adequate fodder reserves for the stock of the farm as a protection against drought conditions. The mixture of hay which has been sown on the farm for the past eight years is as follows:—

Forty-five lbs. of Warden wheat and 45 lbs. of Algerian oats per acre with 120 to 156 lbs. of superphosphates sown on well worked winter fallow. The grain should be thoroughly graded and mixed before seeding. The hay from the mixture is highly palatable, contains a thoroughly balanced food ration, and gives a better yield than that from hay crops of either wheat or oats alone.

Winter Fodder Crops for Sheep.

There is no more serious time to the flock owner in this district, particularly where lambs are being bred, than the months of May, June, and July. Throughout these months native root grasses are very poor and unpalatable, and autumn-grown feed is very scant on land which has been previously cultivated. It is essential, if it is desired to run a maximum number of well-fed sheep on a farm, that the owner should make some provision for these winter months of scarcity.

Dwarf Essex rape, sown on green ploughed land in March, at the rate of 4 lbs. of seed per acre with ½ cwt. of superphosphate, often gives in this district very profitable returns, particularly when the rains in autumn fall early. Land carrying crops of this kind can be fed off to flock ewes and lambs during winter months. In the spring it may be heavy disc-cultivated, and will yield crops of hay or grain equal to those sown on early winter bare fallow. It is also profitable

to sow barley for sheep during the winter months, if the fields be thoroughly and deeply disc-cultivated before the hot summer months bake the surface of the land and dry the conserved winter moisture.

Feeding-off early sown hay and grain crops has also been practised, and can be adopted if the stock are moved when heavy rains fall, and the crop allowed to grow without further feeding after the last week in July. Winter feed of this kind can be valued at a very high figure if the flock-owner is desirous of selling his lambs at the early markets in August or of topping-off aged sheep for winter mutton.

Irrigated Lucerne and Pastures.

The winter grazing value of the lucerne and sown grasses on the irrigation areas of this farm is very high. Stock-carrying tests conducted during the past three years have proved that on an average five dry sheep to the acre may be fattened on them in the months from May to September. In the case of breeding ewes with lambs at foot, four to the acre have been carried, but it has been necessary to stock somewhat lighter than this when the lambs were to be fattened on the mothers during the months of late July and August. The irrigated areas should be subdivided so as to permit of quick changes from paddock to paddock, the flocks being left not longer than a fortnight on any one field, thus allowing the lucerne to shoot again from the crown, and giving the stock a change from time to time, which results in better feeding and maturof the young lambs.

Winter Renovation of Lucerne.

In view of the high prices obtained in this district for lucerne hay this season and the prospects ahead, particular attention is to be given to these irrigated areas during the months of July and August.

A 500-acre Paddock of Shandy Hay at the State Research Farm (average 3½ tons per acre).

Surface drainage of low-lying patches is of vital importance to successful renovation. The whole of the lucerne areas will be heavily grazed until the middle of August, when a rigid, tined, fine-pointed cultivator will be worked to a depth of 3 inches, followed by fertilizer drill, sowing 2 cwt. of superphosphate per acre. The land will then be finally rolled in preparation for first cut of hay, which should be harvested in late September or early October. Our experiments here have proved that the winter cultivation and top dressings increases the hay yield of the area so treated from 18 to 20 cwt. per acre, which means in a season similar to that just past, an extra return of from £8 to £10 per acre for an outlay of approximately £1 per acre. Nitrogenous and potassic and general manures have also been tried, but without the result obtained from superphosphate. Lime top-dressing on the lucerne has proved to be profitable, but has by no means shown the returns on the invested outlay that superphosphate has given. The second dressing of phosphate manure could be profitably applied in mid-summer months after the second or third cutting.

Ewes and Lambs Feeding Off Early-Sown Hay Crop, State Research Farm, Werribee.

Live Stock.

Prospects in the district for the flock-owner have considerably improved during the present month, but pastures are scarce, and the cold weather is preventing their rapid growth. Lambing is in full swing in most parts of the locality, but the percentages do not promise to be high. All the stock on this farm are in particularly good condition owing to our adequate forage reserves.

Cattle.—The dairy herd, 60 in all, comprising 53 head of Red Polled and 7 Friesian, are in excellent condition; 148 gallons of milk per day is now being obtained from the dairy herd. A mixture of silage lucerne, hay and bran, comprises the main winter ration of the herd.

Horses.—Fifty-four working horses have been continually employed during the past month at heavy seeding operations, maintaining their condition well on good shandy-hay chaff.

Sheep.—The following sheep are at present being grazed on the pastures and irrigated areas of this farm:—

Merino Lincoln cross four-year-old ewes ..	600
Lambs at foot by Suffolk rams	510
Stud Suffolk flock	85
Stud Border Leicester flock	260
Mixed weaners and sheep as rations	40
Total	1,495

During the month of May, 510 lambs were marked; the lambs are now doing well, and it is anticipated that the first draft will be available for market toward the end of July. These early lambs are the result of mating 6 two-tooth Suffolk and 6 two-tooth Border Leicester rams with 600 four-year-old Lincoln cross Merino ewes. Lambing started the first week in April, and it has been interesting to note that of the 510 lambs marked, no less than 470 were by the Suffolk rams, and 40 only by the Border Leicester. This shows the vigorous tendencies of the Suffolk breed.

Soldier Trainees.

Twenty returned men are undergoing training in practical farming. During the month of May a few completed their course, and were granted certificates by the Qualification Committee; new men have replaced these on the farm. It has been gratifying to have seen some of the past trainees visit the farm during the month, and hear reports of their satisfactory settlement on land of their own, many of whom through their enthusiasm and industry will undoubtedly be successful.

STANDARD TEST COWS.

Report for Quarter ended 31st March, 1920.

One hundred and twenty-four cows completed the term, only fourteen of which failed to qualify for certificates. Individual returns are as follow :—

W. K. ATKINSON, Swan Hill. (Shorthorn.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Roan Daisy	Not yet allotted	*11.5.19	273	22½	7,779	4·75	369·60	250	421¼

* Calved six weeks prematurely.

J. BAKER, Gheringhap. (Red Poll.)

Completed during the quarter 3. Certificated, 3.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Elcho Maid	Not yet allotted	2.4.19	273	7	5,941	5·34	317·17	250	361½
Karong Belle	,,	5.4.19	273	16¼	6,817	5·24	364·30	250	415¼
Karong Rose II.	,,	9.4.19	273	16¼	5,073	4·15	210·79	175	249¼

F. BIDGOOD, Staghorn. (Jersey.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Clementine of Staghorn ..	5592	2.4.19	*270	3½	2,913	6·46	188·28	175	214½
Fox's Clementine II. ..	4721	23.6 19	273	15½	6,471	5·64	364·80	250	415¾

* Withdrawn before completion of test

Mrs. AGNES BLACK, Noorat (Jersey)

Completed during the quarter, 2. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Mona's Pearl	3577	14.4.19	273	11	6,569	4·72	310·02	250	353¼

CALLERY BROS., Bannockburn. (Ayrshire.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Rose Royal of Langley Park	2841	3.4.19	273	12	6,564	4·90	321·48	250	366¼
Sunflower of Langley Park..	4954	2.5.19	273	8	4,024	4·43	178·60	175	203¼

J. W. COCHRANE, Moorabbin. (Ayrshire.)

Completed during the quarter, 2. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Heatherbelle of Springfield..	4970	18.6.19	273	20¼	8,102	4·12	233·54	250	380¼

DEPARTMENT OF AGRICULTURE, Werribee. (Red Poll.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Mongolia..	Not yet allotted	25.3.19	273	20	9,245	4·11	380·03	250	433¼
Morocco	,,	26.5.19	273	36¼	10,024	3·60	361·20	250	411¼

DICKINSON BROS., Sebastopol. (Friesian.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Phoebe of Ashby	Not yet allotted	18.6.19	273	20	6,060	4·20	254·87	175	290½

C. FALKENBERG, Elliminyt. (Jersey.)

Completed during the quarter, 3. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Hope V.	2899	8.5.19	273	15	6,330	5·37	339·86	250	387½
Lady Merlin of Colac ..	5890	8.6.19	269	4	3,519	5·70	200·65	200	228¾

FLACK AND SEWELL, Berwick. (Friesian.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Dominion Queen Mercedes ..	Not yet allotted	13.5.18	273	27½	10,225	3·42	352·02	175	401¼
Homestead Maggie ..	„	21.6.19	273	23	9,180	3·60	330·48	250	376¾

G. GANGE, junr., Mininera. (Ayrshire.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Gardenia of Seafield ..	5141	29.3.19	273	13	6,311	4·47	282·01	250	321½

GEELONG HARBOR TRUST, Marshalltown. (Ayrshire.)

Completed during the quarter 4. Certificated, 4.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Frolic of Sparrovale ..	2874	8.4.19	273	17½	8,371	4·02	336·77	250	384
Maid of Sparrovale ..	3900	19.4.19	273	18½	6,536	4·85	317·36	250	361¾
Gipsy Girl of Sparrovale ..	3894	28·4.19	273	9½	7,601	4·89	371·95	200	424
Sybil of Sparrovale ..	3907	14.5.19	273	19¼	6,919	4·50	311·24	175	354¾

T. HARVEY, Boisdale. (Jersey.)

Completed during the quarter, 4. Certificated, 4.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Lady Marge of Jerseyholm	4981	27.5.19	273	16	7,339	6·09	447·21	250	509¾
Kirsty VII. of Jerseyholm ..	5918	8.6.19	273	13	5,721	5·79	331·05	175	377¼
Kirsty VI. of Jerseyholm ..	4980	9.6.19	273	16¼	7,173	6·23	447·27	200	509¾
Sparkle II. of Jerseyholm ..	5920	9.6.19	273	13¾	5,204	5·85	304·37	175	347

J. H. HUNTER, Tyntynder South. (Jersey.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Trixie of Tarnpirr	5173	21.4.19	273	21	7,430	6·15	457·11	200	521¼
Ringtail of Tarnpirr ..	5170	21.5.19	273	10	5,092	5·64	287·29	200	327¾

J. HUTCHINSON, Somerville. (Jersey.)

Completed during the quarter, 3. Certificated, 3.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Audrey of Somerville ..	5946	3.4.19	273	13½	8,335	4·92	412·82	200	470¾
Valdean of Somerville ..	5949	26.4.19	273	12¼	5,054	5·20	262·83	175	299¼
Princess Victoria of Holmwood	5152	1.4.19	273	27	11,071	5·01	554·61	250	632¼

A. JACKSON, Glen Forbes. (Jersey.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Creamy of Lesterfield ..	Not yet allotted	14.5.19	*263	16	6,951	4·78	332·11	200	378½

* Withdraw before completion of term.

S. A. JOHNSON, Woodend. (Ayrshire.)

Completed during the quarter, 1. Certificated, Nil.

A. W. JONES, Geelong. (Friesian and Jersey.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Friesian.									
Her Royal Highness ..	Not yet allotted	28.3.19	273	32	9,981	3·56	355·11	175	404¾
Jersey.									
Lady Grey I. of St. Albans ..	4186	20.6.19	273	20	8,679	6·10	529·34	250	603½

GEO. KENT, Archie's Creek. (Ayrshire.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Winsome of Woolamai Park	5276	9.5.19	273	12½	6,257	4·31	269·55	175	307¼

C. G. KNIGHT, Cobram. (Jersey.)

Completed during the quarter, 7. Certificated, 7.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Silver Bell	6038	29.3.19	*249	15½	5,073	5·59	284·00	200	323⅞
My Hope of Kameruka ..	6032	29.3.19	*249	18	6,531	5·09	334·84	175	381½
Rosebud of Tarnpirr ..	6037	31.3.19	*247	14	5,252	6·24	327·77	175	373½
Lady Choice of Tarnpirr ..	5160	25.5.19	273	16	7,897	6·00	474·26	200	540½
Idyll's Ideal	2096	29.5.19	*188	24½	6,144	4·62	283·88	250	323½
Bonnie II. of Tarnpirr ..	Not yet allotted	13.6.19	*174	15½	3,281	6·24	204·74	175	233½
Nimitabel of Kameruka ..	6033	17.6.19	*169	21	5,546	5·12	285·54	200	325½

* Sold before completion of test.

J. A. LANG, ALVIE. (Ayrshire.)

Completed during the quarter, 5. Certificated, 4.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Esme of Inverkiel ..	3155	8.4.19	273	4	7,180	3·97	285·46	250	325½
Esme of Riccarton ..	Not yet allotted	16.4.19	273	7	6,616	3·96	261·78	175	298½
Dime of Riccarton ..	„	16.4.19	264	4	5,411	4·75	256·86	200	292⅜
Milkmaid of Riccarton ..	„	8.6.19	273	9	6,169	4·49	277·48	175	316½

AGRICULTURAL HIGH SCHOOL, Leongatha. (Jersey.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Surprise	Not yet allotted	18.4.19	273	16½	4,712	6·45	303·99	175	346½
Alice	„	13.5.19	273	13½	4,096	6·30	314·83	175	358¾

H. LIDGETT, Myrniong. (Shorthorn.)

Completed during the quarter, 6. Certificated, 3.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Hillfield Duchess 19th ..	Not yet allotted	28.3.19	273	13	6,872	4·03	277·12	175	316
Duchess of Pentland 26th ..	„	28.3.19	273	14	5,950	3·92	232·00	175	264½
Montrose II.	„	7 5.19	273	17	9,239	4·42	408·16	250	465¼

C. G. LYON, Heidelberg. (Jersey.)

Completed during the quarter, 7. Certificated, 7.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Starfinch II.	2915	28.3.19	273	30	8,560	4·83	413·78	250	471½
Hawthorn IV. of Banyule ..	5207	14.4.19	273	26	8,190	5·98	489·60	250	558
Soprano II.	6081	16.4.19	273	18	5 484	6·07	332·97	175	379½
Silvermine XVII. of Banyule	6079	2.5.19	273	14½	4,653	4·90	228·10	175	260
Hawthorn VII. of Banyule..	6068	30.5.19	273	13	5,443	5·51	300·14	175	342¼
Soprano	1395	1.6.19	273	11	5,384	5·76	310·42	250	353¾
Hawthorn VI. of Banyule ..	5209	4.6.19	273	8½	5,240	4·99	261·68	200	298¼

T. MESLEY, Dalyston. (Jersey.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Little Queen	5240	26.5.19	273	18½	6,880	5·46	375·99	250	428¾
Fairy Belle of Warenda ..	5241	26.5.19	273	12½	5,138	6·26	321·70	250	366¾

J. MITCHELL, Sandford. (Red Poll.)

Completed during the quarter, 2. Certificated, Nil.

H. C. MONCKTON, Whittington, Geelong. (Jersey.)

Completed during the quarter. 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Peerless XII. of Melrose ..	6309	8.5.19	273	16	6,259	5·99	374·78	200	427¼

R. RALSTON, Moglonemby, Euroa. (Ayrshire.)

Completed during the quarter, 9. Certificated, 8.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Lady Mary of Ben Kell ..	3050	20.4.19	272	4½	6,483	4·93	319·67	250	364½
Dairymaid of Ben Kell ..	3048	20.4.19	273	16	7,322	4·60	337·08	250	384¼
Isabelle of Ben Kell ..	4577	23.4.19	228	4	4,827	4·22	203·66	200	232
Pearl of Ben Kell ..	3052	27.4.19	273	10½	7,560	4·45	336·73	250	383¾
Poppy of Ben Kell ..	4584	19.5.19	273	4	6,131	5·29	324·33	175	369¾
Bud of Ben Kell	4571	12.6.19	232	4	5,394	4·55	245·75	200	280
Wee Edna of Ben Kell ..	3056	16.6.19	214	3½	6,066	4·20	254·89	250	290½
Pearline of Ben Kell ..	4583	24.6.19	221	5½	4,142	4.49	186·15	175	212¼

C. D. READ, Springhurst. (Jersey.)

Completed during the quarter, 21. Certificated, 21.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Art of Springhurst ..	6199	29.3.19	273	9½	5,407	4·55	246·09	175	280½
Infanta of Springhurst ..	5396	30.3.19	273	9	5,763	5·20	299·92	250	341¾
Camellia of Springhurst ..	6200	1.4.19	273	10¼	4,690	5·61	263·20	175	300
Begum of Springhurst ..	5388	2.4.19	273	10	5,439	5·55	302·18	175	344¼
Science of Springhurst ..	6207	5.4.19	273	11	3,753	5·38	201·91	175	230
Acacia of Springhurst ..	6198	5.4.19	273	13¼	4,487	5·02	225·40	175	257
Crocus of Springhurst ..	5393	7.4.19	273	13	6,421	5·74	368·62	250	420½
Anemone of Springhurst ..	5386	8.4.19	273	17¾	5,983	4·99	298·63	200	340½
Banksia of Springhurst ..	5387	8.4.19	*270	10¾	5,964	5·70	340·27	250	387¾
Princess Royal of Springhurst	5403	15.4.19	273	17¼	5,552	6·02	334·29	200	381
Cobaca of Springhurst ..	4379	18.4.19	273	9¼	7,047	4·86	342·66	250	390½
Nightshade of Springhurst ..	3707	22.4.19	273	16¼	8,589	4·90	421·02	250	479¾
Ixia of Springhurst ..	5397	15.5.19	273	10¼	6,667	4·66	310·77	175	354¼
Lucerne of Springhurst ..	5399	19.5.19	273	10¾	6,156	5·43	334·22	200	381
Brighton Princess of Springhurst	5391	25.5.19	273	6¼	5,327	5·06	269·76	200	307½
Columbine of Springhurst ..	5392	31.5.19	273	7¼	4,616	5·56	258·13	200	294¼
Wattle of Springhurst ..	5408	1·6.19	273	5½	5,529	5·27	291·54	250	332¼
Seaweed of Springhurst ..	6208	6.6.19	273	6½	4,226	5·33	225·48	175	257
Trefoil of Springhurst ..	4395	10.6.19	265	4	4,558	5·48	249·77	250	284¾
Belladonna of Springhurst ..	5389	14.6.19	273	7	5,547	4·57	253·35	200	288¾
Fleur-de-lys of Springhurst ..	5394	17.6.19	273	6	6,863	4·82	330·92	200	377¼

* Withdrawn before completion of term.

C. J. REID, Devenish. (Jersey.)

Completed during the quarter, 1. Certificated, Nil.

F. W. SADLER, Camperdown. (Shorthorn.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter
				lbs.	lbs.		lbs.	lbs.	lbs.
Rosetta III.	Not yet allotted	30.3.19	273	19	7,808	3·92	305·80	175	348½
Poplar Vale Princess 35th ..	,,	28.5.19	273	9½	5,518	3·93	216·72	175	247

SADLER BROS., Noorat. (Ayrshire.)

Completed during the quarter, 7. Certificated, 6.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Esme of Yalart	5839	2.4.19	*241	11½	6,543	3·66	239·28	200	272½
Lesbia of Yalart	3180	4.4.19	273	13	7,363	4·24	312·23	250	356
Ruffy of Ecclefechan ..	3086	15.4.19	273	8½	6,855	3·85	264·03	250	301
Agate of Yalart	5832	18.4.19	273	10	5,553	3·83	212·58	200	242½
Lady Burnbrae	4612	27.4.19	273	13	7,604	4·22	320·63	250	365½
Lenore of Ecclefechan ..	2692	26.6.19	273	17½	7,573	4·33	327·79	250	373½

* Withdrawn before completion of term.

AGRICULTURAL HIGH SCHOOL, Sale. (Ayrshire.)

Completed during the quarter, 2. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Gladys of Ellersllie ..	4810	30.4.19	73	13	6,347	4·65	295·48	250	336¾

A. H. SCHIER, Caldermeade. (Ayrshire.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Countess II. of Pine Grove	4627	22.4.19	273	7½	4,636	4·71	218·54	200	249¼

H. STONE, Baldwyns. Cohuna. (Shorthorn.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Baldwyn's Cherry ..	Not yet allotted	25.5.19	273	7	7,537	4·06	306·44	250	349¼

O. J. SYME, Macedon. (Friesian.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Jennie de Kol	Not yet allotted	20.4.19	273	20	10,196	3·92	400·25	250	456¼
Pearl of Friesland Park ..	,,	15.5.19	273	13	11,041	3·92	432·51	250	493

D. G. TOMKINS, "Muntham," Coleraine. (Jersey.)

Completed during the quarter, 1. Certificated, 1.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Cloth of Gold of Clover Flat	4457	21.4.19	273	25	8,697	4·82	419·55	250	478¼

H. WEBB, Narrewarren. (Ayrshire.)

Completed during the quarter, 4. Certificated, 4.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test.	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Hazel of Holly Green ..	4768	16.4.19	273	13	6,249	4·48	279·75	200	318¾
Jessie of Holly Green ..	4769	7.5.19	273	17½	6,303	4·38	276·02	200	314½
Rosette of Holly Green ..	4783	12.5.19	273	9½	7,732	4·89	378·23	250	431¼
Primrose of Holly Green ..	4779	22.6.19	273	15½	6,596	4·03	266·00	200	303¼

W. WOODMASON, Malvern. (Jersey.)

Completed during the quarter, 2. Certificated, 2.

Name of Cow.	Herd Book No.	Date of Calving.	No. of Days in Test.	Milk last Day of Test	Milk.	Average Test.	Butter Fat.	Standard required.	Estimated Weight of Butter.
				lbs.	lbs.		lbs.	lbs.	lbs.
Jenny Lind X. of Melrose ..	6302	13.4.19	273	24	8,612	5·48	471·69	250	537¾
Flower VI. of Melrose ..	3641	30.4.19	273	25	8,486	5·24	444·32	250	506¼

ORCHARD AND GARDEN NOTES.

E. E. Pescott, F.L.S., Pomologist.

The Orchard.

PLANTING.

The time has now arrived for the general planting of deciduous fruit trees. The soil should have previously been well ploughed and subsoiled, and, as far as possible, drained. To insure satisfactory results, it is essential that the orchard be subsoiled. Where expense is a consideration, drainage may be left for subsequent years, but once the orchard has been planted, it will be impossible to subsoil.

When planting out, the distance between the trees will be determined by the kinds to be planted. For ordinary deciduous fruiting trees it is the custom in this State to plant them 20 feet apart in the rows, the rows also being 20 feet apart. Results have proved this to be a satisfactory practice. Almond trees may be planted 15 or 16 feet apart each way, while walnuts, owing to their spreading habit, require a distance of 30 feet.

Deep planting is not advocated, the general practice being that the depth of planting in the nursery should be followed. If holes be dug, they should be shallow, the bottom being merely loosened to allow a comfortable friable bed for the tree roots. A good practice is to dig the whole strip along which the trees are to be planted, merely removing sufficient soil afterwards when planting. Another satisfactory custom is to plough furrows 20 feet apart, and to plant the trees in the furrows, filling in the soil over the roots and trampling well down.

Before planting, the roots of the young trees should be well trimmed shaped to an even form, and cleanly cut. As the result of their removal from the nursery beds, the roots are generally more or less damaged, and numbers of the fibrous roots, becoming dry, shrivel and die. These all require a clean trimming. Then it is often desirable to remove some of the roots so as to balance the root system. The trimming of the roots gives the young tree a clean root system, and it is enabled to establish itself with young, vigorous roots.

After planting, the top should be well cut back, so as to leave three or four arms, with three or four buds on each. Where it is not possible to have this number of arms or limbs it is frequently advisable to cut back to one stem, allowing the buds to break out strongly and frame the tree after planting. In some countries, the custom of not cutting back the trees the first year is favoured. Local experience has not resulted in favour of this practice, as it is found to be inadvisable to unduly strain the young tree by leaving a heavy top to be supported by the weak-growing root system.

A number of good commercial fruits have been found to be either wholly or partially self-sterile, requiring other varieties near them to enable them to set their fruit. For this purpose it is necessary that the bloom periods should be somewhat coincident.

SPRAYING.

Spraying should now be done to combat scale insects, woolly aphis, and bryobia mite. Any oily emulsion, or the lime-sulphur spray, may be used, and for woolly aphis it will be necessary to apply the spray with considerable pressure, so that the liquid may penetrate the glossy covering of the aphis.

GENERAL WORK.

All ploughing should now be completed; if not, it should be finished before spraying and pruning operations are proceeded with.

Any autumn manuring or liming should also be now carried out. This, too, should be finished before spraying or pruning. Before spraying with oils or with lime sulphur wash, all rough bark on apple and pear trees should be scraped off. This will mean the certain destruction of any codlin moth larvæ hiding underneath.

The Vegetable Garden.

If not previously done, asparagus beds should be well cleaned out, and a top dressing of manure given. To insure good drainage, the soil from the paths, or between the beds, may be thrown up on the beds, so as to deepen the surface drainage, and to consequently warm the beds. This will mean earlier growths. A heavy dressing of manure should be given, and the beds well and roughly dug over.

Plant out seeds of tomatoes and the pumpkin family in the frames; and sow in the open seeds of peas, lettuce, spinach, broad beans, radish, onions, carrot and leek. Asparagus crowns, rhubarb roots, tubers of Jerusalem artichokes, shallots and onions may now be planted out. Celery should still be earthed up, taking care not to have the beds too wet.

The Flower Garden.

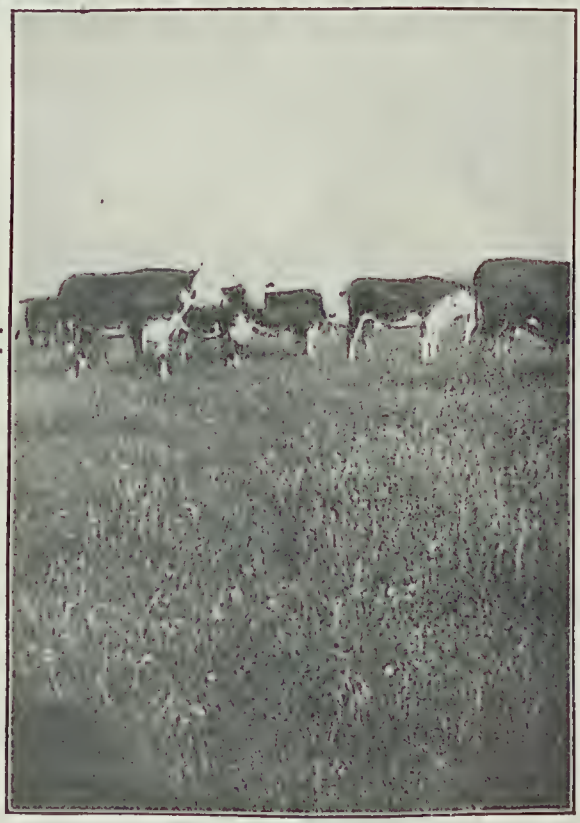
General cleaning up and digging will be the work for this month in flower section and shrubbery. Where the soil is heavy or sour, or where sorrel is plentiful, the garden should be given a heavy dressing of fresh lime, a fair dusting being applied all over the surface. Lime should not be used in conjunction with leaves, garden *débris,* leaf-mould, stable manure, or any other organic matter used for humus. These should be first disposed of by digging well into the soil; then shortly afterwards a top dressing of lime may be given. Should no humic material be used, the lime may be dug in with the autumn digging.

In cleaning up gardens, all light litter and foliage should be either dug in, or, better still, it should be placed in an out-of-the-way corner to form a compost heap. Leaf-mould, well rotted, is especially useful in any garden, particularly where such plants as Azaleas, Rhododendrons, Liliums, &c., are grown, or for pot plant work it is exceedingly valuable. In forming the compost heap, no medium whatever should be added to help the rotting down of the leaves unless it be a little sand. Any chemical added will render the mould unsuitable for its special objects.

Any hardy annuals may be planted out, such as stocks, pansies, wallflowers, &c., and cuttings of roses and hardwood shrubs may also be planted. In planting out cuttings it is very important that all the eyes should be removed from the part of the cutting which is to be below the ground. If this be not done, there will always be the subsequent danger of the plant suckering.

Roses and any summer and autumn flowering shrubs that have finished flowering may be pruned. If the spring flowering shrubs have not previously been pruned, they should be allowed to remain until after the next flowering season. This especially applies to such plants as Spireas, Philadelphus (Mock Orange), Deutzia, Prunus Mume, and other early flowering shrubs. To prune these now would mean the certain loss of a great proportion of their flowers.

Two Great Clovers



Paddock of Strawberry Clover
(From a photograph)

Strawberry Clover

THE GREAT TARWIN MEADOW CLOVER. A most valuable forage plant for damp lands, producing immense quantities of fattening herbage. Greatly relished by stock. When once established it becomes a very rapid grower, and quickly covers up vacant spaces. Sow 2 to 3 lbs. per acre. Clean seed, 15/- per lb.; 14/- per lb. in 7 lb. lots or more. Seed in husk, 10/- per lb. Roots, 15/- per 1,000; 25/- per bag.

Suckling Clover

(Sheep's Trefoil)

ON account of the exceptionally high price of other Clovers, we strongly recommend farmers to sow Suckling Clover. Will do well on any land. Spreads rapidly and yields an abundance of good pasturage at one-third of the cost of other Clovers. Suckling Clover seeds itself down every year. Splendid for sowing in fern country before a burn. Very quick grower. 1/6 per lb.; 140/- per cwt.

LAW, SOMNER Pty. Ltd.

SEED AND PLANT MERCHANTS
139-141 Swanston Street
MELBOURNE

Neptune "A" Prepared Spraying Oil

Contains over 85% of a heavy bodied Red Mineral Oil and is an absolutely deadly insecticide.

Neptune Lime and Sulphur

Is a concentrated Solution, and can be used even when the trees are in full bloom without harming the trees.

Berger's Arsenate of Lead

Will not scorch the trees or wash off, yet deadly to all parasites.

Spray your trees with **Neptune "A" Prepared Spraying Oil** during the winter months, following it up with **Lime and Sulphur** and **Arsenate of Lead,** and beautiful, clean, spotless fruit will be the inevitable result.

NEPTUNE OIL CO. Ltd. 10-12 QUEEN ST. MELBOURNE

FARMERS and GRAZIERS

NATURE helps those who help THEMSELVES.
FALLOW your land and RETAIN the MOISTURE.
Heavier Dressings of NATURE'S Plant Food.

"Federal" Superphosphate

Will Increase your Wheat Yield

Grass Lands TOP-DRESSED with "FEDERAL" SUPERPHOSPHATE yield more WOOL, a greater percentage of well-nourished LAMBS, and Increased Quantities of MILK.

Particulars supplied by

The Australian Explosives & Chemical Co. Ltd.

135 William Street.

'Phone: Central 4795 (two lines).

Works: DEER PARK, VICTORIA.

REGISTERED TRADE MARK

Works—
CURDIE'S RIVER

Telephone—Central 2807

"BULLDOG" Burnt & Unburnt (Ground Carbonate) Agricultural Lime

For Orchards, Crops, and Pastures

Its use is strongly recommended by all experts, and those who have had practical experience. Any quantity supplied at shortest notice.

For applying to land we recommend our "Ajax" Lime Spreader

Rates and full particulars from Distributors—

T. CURPHEY Pty. Ltd.

225 Coppin Street, Richmond, Victoria

BURNT LILYDALE LIME

FOR THE LAND

Farmers who have not used **Burnt Lime** should try it. The action of Burnt Lime on the land is **Immediate.** The demand for Building Lime having slackened owing to the War, Farmers have the opportunity of getting a supply of the **well-known Lilydale Lime.**

ANALYSIS go as high as 98% Calcium Oxide.

Apply—

DAVID MITCHELL ESTATE, Sole Proprietors, OLIVER'S LANE, MELBOURNE

Works—Cave Hill, Lilydale, Tel. Lilydale 4. **Tel. Central 5726.**

M.L.M

Salt Lick, Tonic Meals

and Specialized Foods

for all classes of Stock

M.L.M SALT LICK will keep Sheep, Horses, and Cattle healthy and vigorous.

M.L.M TONIC MEALS ensure the health of all Stock.

M.L.M SPECIALIZED FOODS provide a properly-balanced ration, and therefore maximum production, vigor, growth, and health.

Agents: **Messrs. Harrisons, Ramsay Pty. Ltd.**
666 Bourke Street, Melbourne.

Write for Booklet on Scientific Feeding · M.L.M · Stock Foods D.H. Dept.

Meggitt, Limited

HEAD OFFICE 26 KING ST SYDNEY (Works: Parramatta)

HOT suns and caustic sprays harden and constrict the bark of old trees. This interferes with the flow of sap and weakens both tree and fruit.

Gargoyle Prepared Red Spraying Oil softens and loosens the bark, giving full play to the sap stream. It is thus the best ally of cultivation and manuring.

Gargoyle Prepared Red Spraying Oil is a tree tonic; it rejuvenates the trees and reclothes them with young vigorous shoots, enabling the tree to bear healthy, profitable crops. Many a satisfied user has said "truly Gargoyle Prepared Red Spraying Oil gives new trees for old."

Gargoyle Prepared Red Spraying Oil is the proved destroyer of Aphis, Scale, Red Spider, and other sucking insects.

If not obtainable from your storekeeper, write direct to us. It's made in Australia.
Look for the Red Gargoyle on the container.

GARGOYLE

Vacuum Oil Company
Proprietary Limited

S 5

Prepared Red Spraying Oil

DEPARTMENT OF AGRICULTURE

VICTORIA

PUBLICATIONS

JOURNAL OF THE DEPARTMENT OF AGRICULTURE. 64 pp. Illustrated.

The Journal is issued monthly, and deals with all phases of up-to-date agriculture. The subscription, which is payable in advance, and includes postage, is 3s. per annum for the Commonwealth and New Zealand, and 5s. for the United Kingdom and foreign countries. Single copy, 3d. New volume commences with the January number of each year.

A limited number of the issues comprising Volumes III. (1905), 8 parts, exclusive of February, March, April, and May, out of print; IV. (1906), 9 parts, exclusive of Parts 7, 8, and 9 (July, August, and September) out of print; V. (1907), and VI. (1908), 12 parts each; VII. (1909), 10 parts, exclusive of Parts 2 and 10 (February and October) out of print; and VIII. (1910), 12 parts, are at present in stock, and will be supplied at the foregoing rates. The parts forming the current volume may also be obtained. A few bound copies of Volumes VIII. (1910), IX. (1911), 11 parts, exclusive of February, X. (1912), 6 parts, exclusive of January, February, March, July, September, and October, and XI. (1913), 11 parts, exclusive of June, are at present available. Price, 5s. per volume. *Postage:* C., 3½d.; N.Z., 1s. 2d.; B. & F., 2s. 4d.

YEAR BOOK OF AGRICULTURE FOR 1905. 448 pp., 200 illustrations, 2 coloured plates. Cloth, 3s. 6d.; paper, 2s. 6d. *Postage:* C., cloth 2½d., paper 2d.; N.Z., cloth 9d., paper 8d.; B. & F., cloth 1s. 6d., paper 1s. 4d.

AUSTRALIAN FUNGI. By Dr. Cooke. £1 1s. *Postage:* C., 5d.; N.Z. 10d.; B. & F., 1s. 8d.

PLAN AND SPECIFICATION OF SHEEP-SHEARING SHED. 2s. 6d. *Postage,* 1d.

MILK CHARTS (Monthly and Weekly), 1/- per dozen, post free; Cabinet, 2/- per dozen. When ordering, dairy farmers should mention "Monthly" or "Weekly."

By Professor A. J. Ewart, Government Botanist.

WEEDS, POISON PLANTS, AND NATURALIZED ALIENS OF VICTORIA. 2s. 6d. *Postage:* C., 1½d.; N.Z., 5d.; B. & F., 10d.

PLANTS INDIGENOUS TO VICTORIA. Vol. II., 10s. *Postage:* C., 2d.; N.Z., 8d.; B. & F., 1s. 4d.

By C. French, F.E.S., Government Entomologist.

DESTRUCTIVE INSECTS OF VICTORIA. Parts I., II., III., IV., V., 2s. 6d. each. *Postage:* Parts I. and III., C., 1d.; N.Z., 3d.; B. & F., 6d. each. Parts II. and IV., C., 1½d.; N.Z., 4d.; B. & F., 8d. each. Part V., C., 1d.; N.Z., 4d.; B. & F., 7d.

Application, accompanied by Postal Orders or Notes, must be made to

The Director of Agriculture, Melbourne

GLORIA

LIGHT

A LIGHTING SYSTEM THAT HAS ALL THE ADVANTAGES OF ELECTRICITY AT ONE-TENTH THE COST OF INSTALLATION, AND ONE-QUARTER THE COST OF UPKEEP.

The Gloria System is the most advanced type of Air Gas Lighting, and dispenses with all machinery. All that is necessary is a steel reservoir, hollow flexible tubing, and the separate lamps. There are no parts to wear out and no delicate devices to adjust. It is so simple, so strong, and so durable that we **GUARANTEE** the system for 10 years. Over 10,000 plants in daily use in Australia. Light direct from fuel, no machinery whatever. No odour or refuse.

Write for Complete Information and Catalogues.

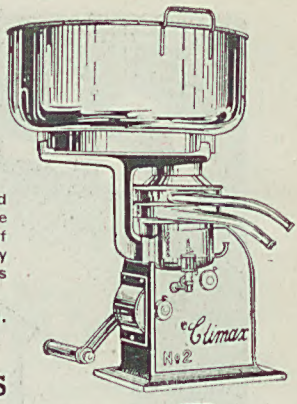
The Gloria Light Co. of Australasia,

Head Office for Australasia—

152 Elizabeth Street, Melbourne

FITTED IN YOUR OWN HOME ON ONE MONTH'S FREE TRIAL

A "CLIMAX" in your Dairy
means Money in your Pocket!



The "Climax" is built by highly specialized labour in the largest separator factory in the world, and is the result of many years of experience and practical test. This is why the "Climax" stands ahead of other machines in respect to—

1. Simplicity and cleanliness of operation.
2. Long life of all parts.
3. Highest possible skimming efficiency.

YEARLY OUTPUT, 200,000 MACHINES

We shall be glad to supply further particulars on request, and demonstrate to you the actual superiorities of the "Climax"; furthermore, we offer you

ONE MONTH'S TRIAL FREE—WITHOUT DEPOSIT

and, if satisfied, you may afterwards pay by cash or terms. Sizes from 10 to 115 gallons per hour.

DUPLICATES ON SHORTEST NOTICE

F. R. MELLOR,
440 Elizabeth Street, Melbourne

DEPARTMENT OF AGRICULTURE

To Intending ... Vinegrowers

Phylloxera RESISTANT STOCKS

Limited numbers of Resistant Vines are obtainable from the Department of Agriculture at the following prices for each description of plant—

RESISTANT ROOTLINGS (Grafted), per 1,000 (packing extra) - £9
Supplied from June to August, 1921

RESISTANT ROOTLINGS (Ungrafted), per 1,000 (packing extra) - £2
Supplied from July to August, 1920

RESISTANT CUTTINGS, per 1,000 (packing extra) - - - £1
Supplied in August, 1920

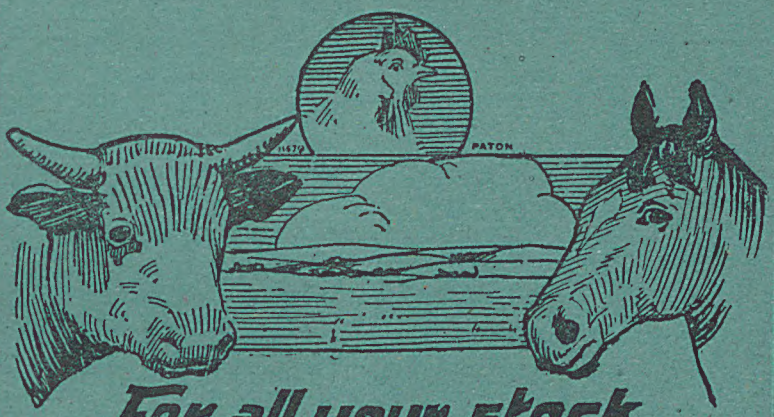
Applications must be made on the official order forms, which may be obtained from **The Director, Department of Agriculture, Melbourne,** or from the **Principal, Viticultural College, Rutherglen.**

Applications for **Grafted Rootlings** (1921 distribution) will be received until 30th June; for **Ungrafted Rootlings** until 31st July, and for **Cuttings** until 30th June.

Full particulars concerning the distribution, explaining the conditions which must be complied with by applicants, are obtainable on application to **The Director of Agriculture, Melbourne**

By Authority: ALBERT J. MULLETT, Government Printer, Melbourne.

NATIONAL MUSEUM MELBOURNE



For all your stock

"Polly" Brand Feed

"POLLY" BRAND FEED is just maize with the germ and surplus starch removed, toasted and made appetising, then disintegrated into powder and put up ready for mixing and immediate use. Is rich in Protein, viz., 20 per cent. guaranteed.

COWS fed on "Polly" Feed will yield 20 per cent. more milk.

HORSES thrive better on "Polly" Feed because the heavy and indigestible starch proportion is removed and the feed is muscle and bone forming.

"POLLY" FEED does not weevil or germinate and it does not turn rancid with age.

Maize Products "Oil Meal"

MAIZE OIL MEAL is toasted and tasteful, does not germinate or turn rancid with age or storage. Ready for use as a mash at a moment's notice.

CALVES thrive on **"OIL MEAL"** better than any other.

POULTRY of all kinds do better with **"OIL MEAL"** than with any other.

FATTENING PIGS.—For fat bacon nothing is more successful for weight and flavor.

MAIZE OIL MEAL differs from our "Polly" Brand Feed in that the latter is cheaper and produces bone and muscle, whereas Maize Oil Meal produces bone, muscle, fat, and a glossy and beautiful coat.

"MAIZE OIL MEAL"
Put up in 100-lb. bags.

"POLLY" BRAND FEED
Every bag guaranteed.

Write for prices and further particulars

MAIZE PRODUCTS PTY. LTD.

FOOTSCRAY, VICTORIA 'Phones—Footscray 367, 368

DEPARTMENT OF AGRICULTURE

Poultry for Settlers

Orders may now be booked for Sittings of Eggs from the Poultry Pens at Werribee

WHITE LEGHORNS

No. 1—PURE COSH STRAIN (World's Record)
Price, £2 2/- per Sitting (16 eggs)

No. 2—From TRAPNESTED HENS, 260 eggs and upwards, mated to cocks bred from 275 and 282 hens **Price, £2 2/-**

No. 3—From TRAPNESTED HENS, 240 and upwards, mated to Cosh x Swift and Moritz Cockerels **Price, £1 1/-**

No. 4—From COSH x SWIFT, SUBIACO AND MORITZ STRAINS **Price, £1 1/-**

Note.—W. N. O'Mullane's Champion Burnley Pen (1914-15), which established the still unbeaten world's record for 6 Leghorns (1,699 eggs) was the progeny of a hen hatched from a sitting from these yards. The pen realized **£75.**

RHODE ISLAND REDS

Pure Dalrymple—Imported Laying Strains

No. 1—From SINGLE TESTED HENS, 250 to 275, mated to a Cock bred from a 264 Hen **Price, £2 2/-**

No. 2—From Hens bred from above mated to Cockerels bred from imported birds **Price, £1 1/-**

To allow for infertile eggs sixteen eggs will be forwarded for each sitting. No guarantee of fertility or replacements will therefore be made.

A limited number of Cockerels bred from birds specified above are available for sale. **Price, £2 2/-** and **£1 1/-** each.

Postal Order or Cheque should accompany Order, which should be addressed to the

MANAGER, RESEARCH FARM, WERRIBEE

SP
630.5